



Western Connecticut State University
WestCollections: digitalcommons@wcsu

Education Dissertations

Department of Education & Educational
Psychology

Spring 5-2017

THE EFFECTS OF A SELF-EFFICACY BASED TREATMENT PROGRAM ON AT-RISK SECONDARY EDUCATION STUDENTS' LEVELS OF GENERAL SELF-EFFICACY AND ACHIEVEMENT MOTIVATION

David Mirto

Western Connecticut State University, mirtod77@gmail.com

Follow this and additional works at: <https://repository.wcsu.edu/educationdis>

 Part of the [Curriculum and Instruction Commons](#), and the [Secondary Education Commons](#)

Recommended Citation

Mirto, David, "THE EFFECTS OF A SELF-EFFICACY BASED TREATMENT PROGRAM ON AT-RISK SECONDARY EDUCATION STUDENTS' LEVELS OF GENERAL SELF-EFFICACY AND ACHIEVEMENT MOTIVATION" (2017). *Education Dissertations*. 34.
<https://repository.wcsu.edu/educationdis/34>

This Dissertation is brought to you via free, open access by the Department of Education & Educational Psychology and by WestCollections: digitalcommons@wcsu, the institutional repository of Western Connecticut State University. It has been accepted for inclusion in Education Dissertations by an authorized administrator of WestCollections: digitalcommons@wcsu. For more information, please contact ir@wcsu.edu.

THE EFFECTS OF A SELF-EFFICACY BASED TREATMENT PROGRAM
ON AT-RISK SECONDARY EDUCATION STUDENTS' LEVELS
OF GENERAL SELF-EFFICACY AND ACHIEVEMENT MOTIVATION

David Mirto

BA, Marketing, Western Connecticut State University, 1999
MBA, Western Connecticut State University, 2002
MS Secondary Education, University of Bridgeport, 2005

A Dissertation

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Education in Instructional Leadership

in the

Department of Education and Educational Psychology

at

Western Connecticut State University

2017

THE EFFECTS OF A SELF-EFFICACY BASED TREATMENT PROGRAM
ON AT-RISK SECONDARY EDUCATION STUDENTS LEVELS
OF GENERAL SELF-EFFICACY AND ACHIEVEMENT MOTIVATION

David Mirto, M.B.A., M.S.E.

Western Connecticut State University

Abstract

This study investigated the impact of a researcher created intervention on general levels of self-efficacy and achievement motivation of secondary education students within a district classified as at-risk. The design was experimental and utilized a pre/post-test comparison and a convenience sample of randomly assigned intact groups of tenth grade students ($n = 59$). General Self Efficacy and Achievement Motivation were measured to determine if a statistical difference existed in the mean scores of the groups after treatment.

Research Question One investigated if a significant difference existed between program types and students' General Self-Efficacy with respect to gender. Results illustrated no significant main effect on general self-efficacy $F(118.208) = .169, p = .683, \eta^2 = .003$. Results identified a significant main effect in general self-efficacy between genders, $F(5377.801) = 7.668, p = .008, \eta^2 = .122$. Results identified no significant interaction between program and students' general self-efficacy with respect to gender, $F(6.174) = .009, p = .926, \eta^2 = .000$.

Research Question Two investigated if a significant difference existed between program types and students' Achievement Motivation with respect to gender. Results illustrated no significant main effect on achievement motivation, $F(6397.806) = 1.262, p = .266, \eta^2 = .022$.

There was no significant main effect in achievement motivation between genders, $F(542.461) = .107, p = .266, \eta^2 = .022$. Results identified no significance in the interaction between program and students achievement motivation with respect to gender, $F(12114.024) = 2.390, p = .128, \eta^2 = .042$.

Copyright by
David Mirto, Ed.D.

2017

APPROVAL PAGE



*School of Professional Studies
Department of Education and Educational Psychology
Doctor of Education in Instructional Leadership*

Doctor of Education Dissertation

THE EFFECTS OF A SELF-EFFICACY BASED TREATMENT PROGRAM
ON AT-RISK SECONDARY EDUCATION STUDENTS' LEVELS
OF GENERAL SELF-EFFICACY AND ACHIEVEMENT MOTIVATION

Presented by

David Mirto, M.B.A., M.S.E., Ed.D.

Karen Burke, CSJ, Ed.D.

Primary Advisor

Karen Burke, CSJ

Signature

3/20/17

Date

Deborah Hardy, Ed.D.

Secondary Advisor Committee Member

Deborah Hardy

Signature

3/20/17

Date

Christine Mangino, Ed.D.

Secondary Advisor Committee Member

Christine Mangino

Signature

3/27/17

Date

ACKNOWLEDGEMENTS

Lao Tzu reportedly said, “The journey of a thousand miles begins with one step” (Lao Tzu). In my experience the journey is only one small part of the experience. Throughout our travels we encounter a veritable gallery of scholars, sages, rogues, and thieves. It is my firm belief that the individuals we encounter and the lessons shared throughout the journey are where the worth of the journey is derived. The wisdom of the traveler comes not from taking the first step, but in including all those that one encounters in the journey itself. The wise traveler understands and accepts the notion that everyone has some lesson to share, knowledge to pass, tradition to pass on, or skill to teach. It is up to the individual traveler to take advantage of the opportunities presented and to listen and learn from experiences shared with the lone traveler. One must be willing to listen with an open-mind, and more importantly an open heart. The traveler who allows him to be blinded by bias, prejudice, or assumption is only limiting his own expansion of knowledge and understanding of the world on a much deeper level.

I would like to acknowledge some of the individuals that I have encountered over the course of my long and arduous journey; a journey that has been periled with tragedy, loss, enlightenment, faith, humor, and experience. I would first like to thank my primary advisor Dr. Karen Burke, without her endless wellspring of compassion and faith I would not have been able to persist during some of the more perilous and difficult moments. Karen never gave up on me even when completing the journey no longer seemed relevant and I was in a position to give up on myself. I would like to acknowledge my secondary advisors Dr. Deborah Hardy and Dr. Christine Mangino, whose knowledge and expertise proved to be invaluable resources during my travels. I would like to acknowledge the program coordinator, Dr. Marcia Delcourt, for understanding the trials my individual journey had set before me and extending her patience and

understanding by allowing me the time and support to deal with personal tragedy in my own time.

I would be remiss if I did not acknowledge my family; my parents and siblings were the first set of teachers I had ever experienced in this life and without them I would not be the man that I am today. My loving parents, Frank Anthony Mirto and Elisa Mary Mirto, taught me the importance of education and faith and instilled these values within me from an early age. My sisters and brothers, Rosemary and Peter Atchison, Maria Mirto, Lisa and Paul Chartier, Carmel and Jeff Kell, Gene Mirto, Tina Mirto, Frank and Kerry Mirto, all continue to be guides and supports along the way. My esteemed editor and fellow scholar Liz. And finally, my beautiful nieces and nephews, Mira, Kristina, Anthony, Daniel, and Mikey who unknowingly provide me with hope and joy each and every day.

Another sage, Jeffrey Lebowski once said “the Dude abides”. A journey such as this or any attempt to abide would not have been possible without the support of all those who I have acknowledged here. Lao Tsu said, “Being deeply loved by someone gives you strength, while loving someone deeply gives you courage” (Lao Tzu). If it were not for each and every one of the aforementioned individuals that I encountered along my journey, I would not have had the strength or courage to persist. I love and thank you all.

DEDICATION

For my Mom, I love and miss you very much. If throughout my teaching career I am able to touch the lives and hearts of one-quarter of the number of people and students who you did within your career at Saints Peter and Paul elementary school, my life and purpose will have been worthwhile. I can't thank you enough for instilling within me a passion for education and the ability to have fun while learning. Words cannot describe the depths of how much I love you; you will always be with me in my mind, soul, and heart.

TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION TO THE STUDY	1
Rationale and Related Literature	1
Contextual Framework	2
Theoretical Foundations	3
Statement of the Problem	5
Potential Benefits of the Research	6
Definition of Key Terms	7
CHAPTER TWO: LITERATURE REVIEW	13
Theories of Self Efficacy and Related Constructs	13
Self-Efficacy	14
Social Cognitive Learning Theory	24
Self-Efficacy and Achievement Motivation	27
Self-Efficacy and Task Persistence	31
Self-Concept and Achievement	33
Treatment Related Research	36
At Risk Students	37

Scaffolding	38
Selecting Goals	44
Coping Skills	50
Sustaining Beliefs	52
Maintaining Optimism	55
CHAPTER THREE: METHODOLOGY	58
Research Questions and Hypotheses	58
Setting and Sample	60
Research Setting	60
Research Sample	62
Research Design	65
Instrumentation	66
The Achievement Motivation Inventory (AMI)	66
The General Self-Efficacy Scale (GSE)	67
Treatment	66
Self-Efficacy Based Improvement Intervention (SEBII)	68
Data Collection Procedures and Timeline	77

Description and Justification of Analyses	78
Analysis of Research Question One	79
Analysis of Research Question Two	79
Limitation of the Study	80
Statement of Ethics and Confidentiality	82
CHAPTER FOUR: ANALYSIS OF THE DATA AND FINDINGS	84
Research Questions and Hypothesis	84
Data Cleansing and Coding	86
Equality of Groups Prior to Treatment	87
Results for Research Question One	90
Results for Research Question Two	98
CHAPTER FIVE: SUMMARY OF CONCLUSIONS AND FINDINGS	111
Review of the Findings	112
Research Question One	112
Research Question Two	113
Relationship to Review of the Literature	117
Threats Related to the Study	118

Limitations of the Study	119
Implications of the Study	121
Suggestions for Future Research	123
References	126
Appendices	
Appendix A: General Self Efficacy Scale (GSE Instrument)	132
Appendix B: General Self-Efficacy Scale (GSE)	136
Scoring, Subscales, and Definitions	
Appendix C: Achievement Motivation Inventory (AMI)	139
Appendix D: Achievement Motivation Inventory (AMI)	142
Scoring, Subscales, and Definitions	
Appendix E: Self Efficacy Based Improvement Intervention (SEBII)	146
Appendix F: Letter and Consent Form (School President)	148
Appendix G: Letter and Consent Form (Principal)	151
Appendix H: Letter and Assent Form (Student)	154
Appendix I: Letter and Consent Form (Teacher)	157
Appendix J: Letter and Consent Form (Parents and Guardian)	161

Appendix K: SEBII Overview	165
Appendix L: SEBII Module Outline in Brief	168
Appendix M: SEBII Pre Curriculum	170
Appendix N: SEBII Website Overview	172
Appendix O: Threats Related to the Study	178
Appendix P: Citi Certification	181

Table of Tables

Table 1: Criteria Qualifying District for Use Within the Study	62
Table 2: Possible Population and Actual Sample	64
Table 3: Number of Participating Classrooms and Students by Group	64
Table 4: Student Demographic Data by Group	65
Table 5: Delineation of the Quasi-Experimental Design	65
Table 6: Design Qualifications of Jury of Independent Experts	71
Table 7: Treatment Program Timeline and Instruction Time	72
Table 8: Between-Subjects Factors	81
Table 9: Gender by Group	81

Table 10: Gender by Class	82
Table 11: Treatment Group Pre-test Skewness and Kurtosis by Instrument	88
Table 12: Levene's Test of Equality of Error Variance	99
Table 13: Descriptive Statistics for Research Question One	91
Table 14: GSE Total Pre-test Values - Descriptive Statistics (ANOVA)	92
Table 15: GSE Total Post-test Values - Levene's Test of Equality of Variance (ANOVA)	92
Table 16: Dependent Variable – GSE Total Post-test (ANOVA)	94
Table 17: GSE Total Post-test Values - Test of Between-Subjects Effects(ANOVA)	95
Table 18: GSE Total Pre-test Values - Test of Between-Subjects Effects	96
Table 19: GSE Total Pre-test Values - Descriptive Statistics (ANOVA)	97
Table 20. GSE Total Pre-test Values - Levene's Test of Equality of Variance (ANOVA)	98
Table 21. Descriptive Statistics for Research Question Two	99
Table 22. AMI Total Post-test Values - Levene's Test of Equality of Variance	100
Table 23. AMI Total Pre-test Values - Descriptive Statistics (ANOVA)	101

Table 24. AMI Total Post-test Values - Test of Between-Subjects Effects(ANOVA)	102
Table 25. AMI Total Pre-test Values - Test of Between-Subjects Effects	103
Table 26. AMI Total Pre-test Values - Descriptive Statistics (ANOVA)	104
Table 27. Dependent Variable - AMI Total Post-test (ANOVA)	105
Table 28. AMI Total Pre-test Values - Levene's Test of Equality of Variance (ANOVA)	106
Table 29. GSE Post-test Comparison Significance Levels (ANOVA v. ANCOVA)	107
Table 30. AMI Post-test Comparison Significance Levels (ANOVA v. ANCOVA)	107
Table 31. AMI Mean Comparison	108
Table 32. GSE Mean Comparison	119
Table 33. AMI Post-test Adjusted Means	110
Table 34. GSE Post-test Adjusted Means	110
Table 35. GSE Mean Comparison	113
Table 36. AMI Mean Comparison	115

Table 37. Dependent Variable –Post-test mean results comparison (ANOVA and ANCOVA) 116

CHAPTER ONE: INTRODUCTION TO THE STUDY

A person's perceived self-efficacy has been linked to performance, motivation, and achievement in several developmental domains. A low perception of self-efficacy can undermine an individual's actual levels of ability, talent, and potential (Bandura, 1977a). A self-efficacy based improvement program, when developed and implemented, may impact students' levels of motivation achievement for any situation or environment in which they find themselves.

Rationale and Related Research

The intent of this study was to implement a researcher developed treatment program to determine if the program increased student levels of self-efficacy and achievement motivation. Research has shown that more accurate beliefs in ability have a positive impact on what challenges students attempt to achieve, according to Dweck (1986), "It has been long known that factors other than ability influence whether children seek or avoid challenges and whether they use and develop skills effectively" (p. 1040). The rationale behind the development and implementation of this treatment was that by providing the students with useful strategies and tactics for improving self-efficacy, the treatment might have a positive impact on students' levels of achievement motivation. When students can effectively analyze and assess externally imposed beliefs about their achievement motivation, the students' understanding may help break the cycle of underachievement and living down to others' false expectations (Bandura, 1977b; Dweck, 1986). Grusec (1992) observed that according to Bandura, "People develop domain-specific beliefs about their own abilities and characteristics that guide their behavior by determining what they try to achieve and how much effort they put into their performance in that particular situation or domain" (p. 782).

The review of the literature to support the rationale for this study is divided into two sections: the contextual framework to establish the rationale and theoretical foundations for the study. The contextual framework establishes how students perceive various challenges and what degree of achievement motivation students are willing to exert as a result of these perceptions. The theoretical foundation establishes the link between a student's level of self-efficacy and the impact of self-efficacy on perceptions related to achievement motivation.

Contextual Framework

According to Dweck, "Motivational processes influence a child's acquisition, transfer, and use of knowledge and skills, yet educationally relevant conceptions of motivation have been elusive" (1986, p. 1040). The need to identify and teach motivational processes within our students is essential for their learning. This ability translates into "how the particular goals children pursue on cognitive tasks shape their reactions to success and failure and influence their cognitive performance" (Dweck, 1986, p. 1040). To have students select appropriately challenging tasks and not surrender in the face of failure is an essential component of their future successes and achievement (Dweck, 1986; Jinks & Morgan 1997). Jinks and Morgan (1992) surmised that a link between efficacy and achievement exist. "Results suggest that understanding more about students' sense of academic efficacy and the role those beliefs may play in science achievement have important implications for both curriculum and instruction" (Jinks & Morgan, 1997, p. 586). Dweck (1986) attempted to sort this process by identifying how children select and pursue cognitive tasks. She suggested that how children select tasks is in accordance with the type of cognitive practice that they employ, either adaptive or maladaptive. The selected cognitive process may help to predict how children will respond during successes

and failures and may determine how children will select their next achievement goal, as well as how much motivation they place upon completing that goal (Dweck, 1986).

Theoretical Foundations

The field of self-efficacy was first formalized in 1977 and was pioneered by Albert Bandura. Bandura postulated that “people develop domain specific beliefs about their own abilities and characteristics that guide their behavior by determining what they try to achieve and how much effort they put into their performance in that particular situation or domain” (Bandura, 1977b). Bandura identified four principle sources of information from which individuals base their self-efficacy; these principle sources are performance attainment, vicarious experiences, verbal persuasion, and emotional arousal states (Bandura, 1977b). Late in the 1980s, Dweck shifted the focus of the field of study to self-efficacy and motivational processes toward the idea that the mindset is malleable and subject to change (1986). Dweck determined that the choice of the goals the students have in the classroom could impact the cognitive process that they use for completion of the goal. These cognitive processes were either adaptive or maladaptive. Dweck (1986) stated, “Adaptive motivational patterns are those that promote the establishment, maintenance and attainment of personally challenging and personally valued achievement goals. Maladaptive patterns are associated with a failure to establish reasonable, valued goals, to maintain effective striving toward those goals” (p. 1040).

In the late 1990s, Bandura and Schunk turned their attention towards self-efficacy in the classroom as related to learning. Bandura (1997) identified that the success or failure of non-mainstream students cannot be attributed to a single factor; but that teachers with high levels of self-efficacy can be a determining factor on the success or failure of these students. Schunk (1996) stated that self-efficacy may not have a single measure as the measure may change since

self-efficacy is dependent upon specific domains. This realization shifted Schunk's attention to self-efficacy in the classroom for learning and performance. Schunk stated that, "Despite the increased interest in self-efficacy theory, there exists confusion over such issues as when and how individuals judge self-efficacy, whether it operates uniformly across domains, and what are acceptable ways to assess it" (1996, p. 4). Schunk (1996) differentiated the assessment of self-efficacy as related to learning new behaviors and self-efficacy as related to known behaviors. This is an important differentiation when measuring self-efficacy because Bandura hypothesized that self-efficacy affects choice of activities, effort, and persistence (Bandura, 1977a). Schunk seemed to agree with Bandura's hypothesis as he stated "Students who hold a low sense of self-efficacy for accomplishing a task may avoid it" (Schunk, 1996, p. 4).

Kapikiran (2012) conducted a study with a sample population of 586 students. The purpose was "to examine the mediator and moderator role of self-handicapping and achievement goal orientation variables between negative thoughts and intrinsic achievement motivation in high school students" (p. 705). Results of the study included a positive correlation between intrinsic motivation and goal orientation. The results included that the belief in achievement motivation has an impact on the type and difficulty of challenges that the students select (Kapikiran, 2012).

Breso, Schaufeli, and Salanova (2010) "examine students' perceptions concerning their future capacity to achieve adequate levels of academic achievement" (p. 343). A sample population of 71 students was used for the study and measured several factors related to student perceptions. The results showed that "self-efficacy is critical in enhancing students' comfort levels when facing exams, changes in self-efficacy levels are strongly tied to changes in states of well-being such as burnout and engagement" (Breso et al., 2010, p. 3).

Statement of the Problem

Often a student's achievement motivation is limited by a perceived glass-ceiling placed upon them by an external person, factor, or situation. These perceptions are developed by what they hear from influential peer groups such as friends, family, and society. Bandura stated, "The strength of people's convictions in their own effectiveness is likely to affect whether they will even try to cope with given situations" (1977a, p. 29). Due to the influential nature of this construct, school personnel in all districts should be aware of how externally imposed beliefs can impact student achievement motivation. Student behaviors can be related to their beliefs in regard to their ability; these beliefs can be externally imposed and untrue. Jinks and Morgan cited Bandura's work by stating, "Bandura theorizes that individuals develop general anticipation regarding cause and effect based upon experience" (Jinks & Morgan, 1997, p. 586). Jinks and Morgan continued by stating, "He [Bandura] also suggests that individuals develop specific beliefs regarding their own coping abilities within situation-specific constructs" (1997, p. 586).

Kirby, Nataraj, Naftel and Berends conducted a longitudinal study of Texas school districts from 1979 to 1999 where the purpose was "to identify what constituted an *at-risk* school district, what characteristics differentiate them from other districts and how to staff them" (1999, p. 9). The results of the study included *at-risk* districts as "districts [that] serve a large number of students at risk of educational failure" (Kirby et al., 1999, p. 9). These districts exhibit certain characteristics that put them in the at-risk category including a high percentage of economically disadvantaged families, low student attrition rates, low student test scores, high dropout rates, increasing numbers of economically disadvantaged minority students, and low teacher retention rates (Kirby et al., 1999).

Limited research exists investigating the impact of a self-efficacy based improvement intervention on the achievement motivation of students within at-risk districts. The critical nature of the need for this research is that a large number of students within at-risk districts are being conditioned to believe they have low achievement ability despite their potential level of achievement ability they, therefore, develop low academic esteem (Canfield, 1990). A great deal of potential and talent are being lost because students are being taught to doubt their ability to achieve; primarily because they do not possess the proper skills and strategies to help shield themselves from negative and potentially false statements regarding their achievement ability leading them to be more likely to associate with delinquent groups (Carroll et al., 2013). According to Bandura, a person's perceived self-efficacy has been linked to performance, motivation, and achievement in several domains. A low perception of self-efficacy can undermine an individual's actual levels of ability, talent, and potential (Bandura, 1977a).

Potential Benefits of the Research

This research may allow for the expansion of the existing body of knowledge related to self-efficacy through the investigation of the impact of a novel (researcher-generated) Self-Efficacy Based Improvement Intervention (SEBII) on students' levels of self-efficacy and achievement motivation within an at-risk district. The SEBII may also provide at-risk students with strategies and tactics to increase self-efficacy. The strategies provided to the students were included utilizing existing research on factors known to impact self-efficacy. The instruments that were used to determine if an increase occurred were the *General Self-Efficacy Scale* (GSE; Schwarzer & Jerusalem, 1995) and the *Achievement Motivation Inventory* (AMI; Schuler, Thornton, Frintrup, & Mueller-Hanson, 2001).

Definition of Key Terms

The following key terms were used throughout the study:

1. *Achievement Behavior* is “behavior directed at developing or demonstrating high rather than low ability” (Nicholls, 1984, p. 328).
2. *Achievement Motivation* involves a particular class of goals relating to competence (Dweck, 1986, p. 1040).
3. *Adaptive Motivational Patterns* are behavior patterns “that promote the establishment, maintenance, and attainment of personally challenging and personally valued achievement goals” (Dweck, 1986, p. 1040).
4. *At-Risk Districts* are “districts [that] serve a large number of students at-risk of educational failure” (Kirby et al., 1999, p.9).
5. *At-Risk Student* are defined as the following,
 - a. “Students who are at risk of not achieving the goals of education, of not meeting local and state standards of high school graduation, and of not acquiring the knowledge, skills, and dispositions to become productive members of society (receiving less than 2.00 grade point average)” (McCann & Austin, 1988, abstract).
 - b. “Children who exhibit behaviors that interfere with themselves and others attaining an education, requiring disciplinary action.” (McCann & Austin, 1988, abstract)
 - c. “Those whose family background characteristics may place them at risk (low income to below poverty level, non-English native speaker, etc.)” (McCann & Austin, 1988, abstract).
6. *Learning Goals* are employed when “... individuals seek to increase their competence, to understand or master something new” (Dweck, 1986, p. 1040).

7. *Locus of Control* is an individual's beliefs that outcomes are a result either of their own actions or chance (Bandura, 1977b).
8. *Maladaptive Motivational Patterns* are behavior patterns that are "associated with a failure to establish reasonable, valued goals, to maintain effective striving toward those goals, or, ultimately, to attain valued goals that are potentially within one's reach" (Dweck, 1986, p. 1040).
9. *Performance Goals* are those "in which individuals seek to gain favorable judgments of their competence or avoid negative judgments of their competence" (Dweck, 1986, p. 1040).
10. *Self-Efficacy* refers to how people develop domain-specific beliefs about their own abilities and characteristics that guide their behavior by determining what they try to achieve and how much effort they put into their performance in that particular situation or domain (Bandura, 1977a).
11. *Triadic Reciprocal Determinism* is the belief that behavior, the environment, and cognition operate as interacting determinants that have a bidirectional influence on each other (Bandura, 1977b).

Methodology

The study was conducted over an eight-week time period where tenth grade students' ($N = 59$) participated in a researcher developed self-efficacy treatment program. A pre- and post-test administration of both the *General Self-Efficacy Scale* (Schwarzer et al., 1995) and the *Achievement Motivation Inventory* (Schuler et al., 2001) in weeks one and eight. The pre- and post-tests took approximately one hour to complete and were administered by the classroom teacher who received prior training from the researcher. During weeks two through seven the

participants in the treatment group received the researcher-developed Self-Efficacy Based Improvement Intervention (SEBII). Also, during weeks two through seven there was a weekly phone call with the administering teachers to ensure fidelity of administration. The SEBII (see Appendix C) included the digital delivery of instruction and strategies related to attributing success, selecting goals, scaffolding, maintaining optimism, developing coping skills, and building and sustaining beliefs. These strategies were designed to target specific subscales of the GSE (Schwarzer et al., 1995) and AMI (Schuler et al., 2001) instruments.

Each weekly treatment intervention module was divided into five sections. The sections were initial reflection, direct instruction, modeling, application and closing self-reflection. The GSE (Schwarzer et al., 1995) was administered to determine student scores related to the subscales. Subscales included: general self-efficacy, proactive attitudes, self-regulation, proactive coping, instrumental support seeking, avoidance coping, reflective coping, strategic planning, preventative coping, and emotional support seeking. The AMI; Schuler et al. (2001) was administered to measure constructs of work related to achievement motivations. The researcher had the ability to test for 17 facets of achievement motivation (Shuler et al., 2001).

Research Questions

Research Question One: Is there a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' General Self-Efficacy?

- a. Is there a significant main effect in General Self-Efficacy for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program?

- b. Is there a significant main effect in General Self-Efficacy between male and female students?
- c. Is there a significant interaction for group membership and gender with respect to General Self-Efficacy?

Non-directional Hypothesis: There will be a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' General Self-Efficacy

- a. There will be a significant main effect in General Self-Efficacy for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program.
- b. There will be a significant main effect in General Self-Efficacy between male and female students.
- c. There will be a significant interaction for group membership and gender with respect to General Self-Efficacy.

Research Question Two: Is there a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' Achievement Motivation?

- a. Is there a significant main effect in Achievement Motivation for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program?
- b. Is there a significant main effect in Achievement Motivation between male and female students?

- c. Is there a significant interaction for group membership and gender with respect to Achievement Motivation?

Non-directional Hypothesis: There will be a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' Achievement Motivation.

- a. There will be a significant main effect in Achievement Motivation for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program.
- b. There will be a significant main effect in Achievement Motivation between male and female students.
- c. There will be a significant interaction for group membership and gender with respect to Achievement Motivation.

Limitation of the Study

Limitations to the study included the researcher not being able to control for the assignment of individual students to either the comparison group or treatment group as random assignment of intact groups was used within the study. Testing fatigue was experienced by students during both the pre and post-test administration. The testing fatigue experienced by the males during the study were also limitations to the study, this was included during the data cleansing process when it was noted that more males demonstrated sequential patterns in their answers. The differences included between genders during the data analysis phase was not a result of the test fatigue experienced by males, tests with identifiable patterns were removed during the data cleansing process prior to analysis of the data. Population validity is also a potential limitation in terms of the findings being generalizable across populations. Another

potential limitation of the study could have been teacher bias. Though the administering teachers' were trained and instructed to follow the program instructions to the letter, they were administering the program within their own classrooms for students' with whom they already had a prior relationship. The limitations to the study are addressed in greater detail in Chapter 5.

CHAPTER 2: REVIEW OF THE LITERATURE

The literature review details the related theoretical constructs utilized within the study and encompasses an overview of the related literature within the field. The chapter outlines the primary theoretical constructs by Bandura (1977a; 1977b; 1982; 1986; 1993; 1995; 1997; 2003) and Dweck (1975, 1986, 1988) that were used as the foundational research for the study. This chapter provides primary research to support the need for a self-efficacy based treatment program and establishes justification for the module topics that were selected for the treatment aspect of the study.

Theories of Self-Efficacy and Related Constructs

The following articles were researched from the body of existing literature and used to identify the major constructs related to self-efficacy as well as the primary theorists within this particular field of research. The primary theorist who provided the foundational research for this study is Albert Bandura and his theory of Self-Efficacy. Bandura stated, “persons’ perceived self-efficacy has been linked to performance, motivation, and achievement in several domains. A low perception of self-efficacy can undermine an individual’s actual levels of ability, talent, and potential” (1977a, p. 1040). The current study attempted to increase students’ perceptions through the use of the researcher designed treatment program.

Bandura continued his work in regard to self-efficacy and developed the Social Learning Theory that shifted the focus of learning theory from determinants that were difficult to measure towards an examination of external influences on participant responsiveness (1977b). This led Bandura to explore the participants’ anticipated stimulus to the attention given to a modeling procedure and how symbolic coding led to cognitive organization and results (1977b). The theory was designed with emphasis that behavior, the environment, and cognition operate as

interacting determinants that have a bidirectional influence on each other (Bandura, 1977b).

Bandura thought that this design would help increase participants' locus of control in regard to self-efficacy by helping the participants believe that the outcomes of situations were a product of their own actions rather than chance.

Dweck (1986) contributed to the foundational research by tying self-efficacious beliefs to goal selection. According to Dweck this translated into "how the particular goals children pursue on cognitive tasks shape their reactions to success and failure and influence their cognitive performance" (1986, p. 1040). More accurate beliefs in ability have a positive impact on what challenges students attempt to achieve. It is no surprise that the field of self-efficacy has been closely associated with potential benefits for students within the classroom environment. The importance of self-efficacy as a contributing factor to success is becoming increasingly recognized in the research regarding motivation achievement and goal effects (Bandura, 2003).

Self-Efficacy

The theory of self-efficacy is based on the premise that "psychological procedures whatever their form, alter the level and strength of self-efficacy" (Bandura, 1977a, p. 191). Bandura hypothesized that "expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experience" (Bandura, 1977a, p. 191). Bandura postulated that an increase in self-efficacy along with mastery experiences would facilitate in reducing defensive behaviors during situations that are perceived as being threatening. Bandura identified several factors that influence the cognitive processing of an individual's perceived efficacy information; these factors are enactive, vicarious, exhortative, and emotive sources of information. Bandura's proposed model included four sources where individuals gather expectations of personal

efficacy; the four sources are performance accomplishments, vicarious experience, verbal persuasion, and psychological states (Bandura, 1977a, p. 191).

Performance based procedures were effective at facilitating psychological change and the theory of self-efficacy established the position that changes in an individual's self-efficacy stemmed from a common cognitive mechanism. Mastery experience where the individual engaged in and successfully accomplished a task will mediate change in the psychological state (Bandura, 1982). According to Bandura "theoretical formulations emphasizing peripheral mechanisms begin to give way to cognitively oriented theories that explain behavior in terms of central processing of direct, vicarious, and symbolic sources of information" (Bandura, 1977a, p. 192). Existing research documented that cognitive processes were a critical factor in developing and retaining new behavior patterns. Transitory experiences that are coded by the individual gained a form of symbolic representation that facilitated recall. Due to this, many behaviors demonstrated by individuals are learned from observing others (Bandura, 1977a). Bandura stated, "From observing others, one forms a conception of how new behavior patterns are performed, and on later occasions the symbolic construction serves as a guide for action" (1977a, p.192).

Individuals also learn to alter behaviors through experience of consequences resulting from the application of existing behaviors (Bandura, 1977a). Consequences of actions serve as guideposts that can influence future actions. If a positive outcome resulted after an applied behavior, that behavior is likely be repeated in the future. Conversely negative outcomes likely curtail the reoccurrence of that behavior in the future. Bandura stated, "Learning from differential outcomes becomes a special case of observational learning. In this mode of conveying response information, the conception of the appropriate behavior is gradually

constructed from observing the effects of one's actions rather than from the examples provided by others" (Bandura, 1977a, p. 192). However, learning from the resulting consequences of one's actions relies on the individual recognizing the pairing of the action and the consequence, without the recognition individuals will repeat behaviors that produce undesired outcomes. This relies heavily on the individual recognizing the pairing of antecedent determinant and responses (Bandura, 1977a). Bandura stressed the notion of an antecedent being used as a predictive function for an individual to help determine resulting actions in order to strengthen the locus of control for an individual as this will help increase perceived self-efficacy. Bandura stated, "Reinterpretation of antecedent determinates as predictive cues, rather than as controlling stimuli, has shifted the locus of the regulation of behavior from the stimulus to the individual" (Bandura, 1977a, p. 192). This facilitates the increase in motivation for the individual considering that motivation is concerned with activation of and persistence of behavior.

The ability to determine future consequences in thought through cognitive representation of outcomes facilitates the individual in developing and utilizing motivators of behavior from expected outcomes (Bandura, 1977a). Goal setting and the ability to self-evaluate also serves to increase the self-motivation of the individual, self-motivation is increased by the individual establishing standards that are used to evaluate performance. When the individual utilizes these standards to judge the resulting outcome of a behavior then performance incentives can be internally created to foster motivation or adjustments can be made to deter undesirable results. This process of self-motivation relies on the individual evaluating resulting consequences and identifying the needed adjustment in behavior to produce the desired consequences (Bandura, 1993). According to Bandura, "Negative discrepancies between performance and standards create dissatisfaction that motivate corrective changes in behavior" (Bandura, 1977a, p. 193).

Self-efficacy theory differentiates efficacy expectations from response outcome expectancies (Bandura, 1977a). Efficacy expectation refers to the conviction of individuals in ability to perform a behavior that will produce desired results, as opposed to outcome expectancy where individuals believe that a specific action will lead to certain outcomes. These two concepts are differentiated because the idea that a certain behavior will produce a certain outcome does not mean that an individual will be able to implement the behavior. If the individual knows a behavior may produce a given outcome but that individual is debilitated by self-doubt, the individual may not choose to alter his current behavior as a result of the self-doubt. If an individual does not believe that he or she can successfully execute the behavior, even while knowing the outcome may produce a desired result, then he or she will not alter his or her behavior if the desired result is perceived to be unattainable. Due to this notion, it is a combination of expectation and mastery experiences that will effectively change an individual's undertakings and coping behaviors. According to Bandura, "The strength of people's convictions in their own effectiveness is likely to affect whether they will even try to cope with given situations" (1977, p. 193). The perceived efficacy-expectation of the individual may ultimately determine what someone will attempt and how long he or she will persist. The individual's expectation will not produce the desired result if the individual is lacking the required capabilities to perform the task (Bandura, 1977a).

Bandura stated that, "Efficacy expectations vary on several dimensions that have important performance implications" (Bandura, 1977a, p. 194). Efficacy expectations are measured by magnitude, generality, and strength. Magnitude refers to the difficulty of the task; generality refers to the extent to which the magnitude and beliefs of the individual will generalize across varying tasks and situations, as well as, how task specific the experience is for

the individual; and strength refers to how easily extinguishable the coping efforts will be for the individual (Bandura, 1977a). In order to perform a comprehensive expectancy analysis the dimensions of magnitude, generality, and strength are measured. According to Bandura, “Expectations of personal efficacy are based on four major sources of information: performance accomplishments, vicarious experience, verbal persuasion, and psychological states” (Bandura, 1977a, p. 195). According to Bandura, efficacy expectations derived from performance accomplishments are gained through personal mastery and direct experience. Because this source is derived from personal mastery early failures can lead to lower efficacy expectations for the individual, therefore it is critical to scaffold the tasks accordingly to promote early successes to increase expectations. Once strong efficacy expectations are developed within an individual he or she may come to realize that with sustained effort in the face of adversity even the most challenging tasks can be mastered (Bandura, 1977b). According to Bandura, “Once established, enhanced self-efficacy tends to generalize to other situations in which performance was self-debilitated by preoccupation with personal inadequacies” (Bandura, 1995). When perceived efficacy-expectations start to rise within the individual they find that the generalizability of motivation and sustained effort begin to impact behavior in both familiar and unfamiliar situations.

According to Bandura (1977) mastery experience occurs when an individual performs an appropriately challenging task successfully that leads to an increase in the individual’s sense of self-efficacy. While modeling alone tends to be weaker than mastery experience to evoke a change in behavior, modeling can produce positive results in an individual’s efficacy expectations (Bandura, 1977a). Modeling helps increase efficacy expectations when it has clear outcomes and can be more impactful when the individual realizes that people with varying backgrounds can succeed at the activity. The individual witnessing the models perform activities perceived as

threatening helps them understand that there can be an improvement in his performance with sustained effort (Bandura, 1977a). Verbal persuasion can also be used to increase efficacy expectations. Verbal persuasion tends to be less effective than mastery experience; however, considering verbal persuasion is easy to apply and readily available, it can be used in combination to help the individual maintain persistence and foster a belief in his coping ability. This is important when considering emotional arousal as the final source of information that can impact perceived self-efficacy. Threatening situations elicit an anxiety response within an individual and the heightened emotional arousal can potentially impact their ability to perform under given circumstances. This can be a debilitating response in some individuals given the level of emotional arousal experienced. Anxiety arousal can be diminished through modeling procedures where success and accomplishment are witnessed under similar conditions. Emotional arousal can impact motivation and task persistence within the individual and diminishing this state of arousal can also diminish avoidance behaviors (Bandura, 1977a). Social learning theory emphasizes the informative function of this state of cognitive arousal. Placing the emphasis on the cognitive arousal as opposed to emotional arousal allows the individual to determine the level and course of behavioral action for the situation (Bandura, 1977b). Bandura stated, “When motivation is conceptualized in terms of cognitive process, the informational and motivational effects of arousal are treated as interdependent” (Bandura, 1977a, p. 199).

The impact of efficacy expectations is determined by how it is evaluated by the individual. The factors that lend themselves to the evaluative process for efficacy expectations are “the social, situational, and contextual factors under which situations occur” (Bandura, 1977a, p. 200). The actual success or failure of the applied behavior does not matter if the individual cognitive appraisal of the situation is incorrect. An individual can generate a success

and attribute that success to a high level of skill when in fact it was an overly simplistic task to begin with, this form of misappraisal can lead to misconceived notions of ability because no new or relevant information was generated or retained. Likewise the cognitive misappraisal of negative experiences can lead the individual to believe they were a result of something other than the actual cause (Bandura, 1977a). According to Bandura, “The more varied the circumstances in which threats are mastered independently, the more likely are success experiences to authenticate personal efficacy and to impede formation of discriminations that insulate self-perceptions from disconfirming evidence” (Bandura, 1977a, p. 201)

Bandura stated, “Self-precepts of efficacy influence thought patterns, actions, and emotional arousal. In causal tests the higher the level of induced self-efficacy, the higher the performance accomplishments and the lower the emotional arousal” (1982, p. 122). Bandura identified that knowledge, transformational operations, and component skills are all necessary parts of accomplished performance, but these are insufficient without the individual engaging in some form of self-referent thought (Bandura, 1982). This explains the cases where individuals do not behave optimally even though they have the appropriate skill set or know the correct behavior to apply. Bandura was concerned with addressing how individuals judge their capabilities and perceived self-efficacy and how in turn these impact the individuals’ motivation and behavior. Perceived self-efficacy deals with individuals’ judgements in regard to their belief in ability and how well they can deal with situations that present themselves. Bandura acknowledged that efficacy in dealing with one’s environment is a malleable construct and not just a matter of knowing what to do in a given situation (Bandura, 1982). This process involves the combination and successful execution of generating an accurate picture of cognitive, social, and behavioral skills that are organized and applied according to the demands of the situation

(Bandura, 1982). According to Bandura, “self-appraisal of operative capabilities function as one set of proximal determinants for how people behave, their thought patterns, and the emotional reactions they experience in taxing situations” (1982, p. 123). Individuals make decisions every day, acting on misconceptions or false beliefs in regard to ability that can cause unexpected and devastating consequences. Individuals must have realistic beliefs in regard to personal efficacy as they inform our judgments and behaviors within our environments and situations that we encounter on a daily basis (Bandura, 1982). Misconceptions in our self-efficacy judgements can cause us to undertake activities that we are not capable of completing or turn away from activities that we are capable of accomplishing (Bandura1977a). These judgements will also inform the individual about how long they should persist and how much effort they should sustain within a given situation. Individuals with high levels of perceived self-efficacy might be able to sustain both the preparatory and execution periods in more sustained and successful manner when applying existing skills. A strong sense of self-efficacy enables one to withstand failure when coupled with uncertainty and maintain a more accurate judgement of their capabilities (Bandura 1993). Bandura stated, “an individual’s judgement of their capabilities influence their thought patterns and emotional reactions during anticipatory and actual transactions with the environment” (1982, p. 123). Individuals who maintain a high perceived sense of efficacy may engage in more thought and effort in regard to the situation and are not easily deterred when challenges arise.

The purpose of a study conducted by Bandura (1892) was to test propositions and origins of perceived self-efficacy for the participants involved. The authors utilized a micro-analytic methodology to assess the data. The researcher administered graduated self-efficacy scales representing varying tasks and degrees of difficulty, stress, and complexity depending upon the

particular domain under investigation. Participants with moderate to severe phobias were asked to judge the complexity of the tasks presented and their perceived degree of certainty in regard to their ability to complete the task. This procedure continued as each participant underwent a sequential process of task completion in difficulty order from easy to difficult. Between each sequence the participants completed a self-efficacy measure until they were assigned a low, moderate, or high ranking for their self-efficacy score. The results were used to identify a correlation between perceived self-efficacy and performance accomplishments. As the perceived level of self-efficacy for the participants increased so did their level of performance accomplishments. Bandura concluded that “because people are influenced more by how they read their performance successes than by the success per se, perceived self-efficacy was a better predictor of subsequent behavior than was performance attainment in treatment” (1982, p. 125).

Bandura conducted an additional, more rigorous, study to test the causality of self-efficacy to action by structuring an experiment where modeling and vicarious experience were the primary methodology used. The author hypothesized that “self-precepts of efficacy would operate as cognitive mediators of action” (Bandura, 1982, p. 126). In this study the participants observed the model engaging in the activity and emphasized two aspects that would enhance the participants perceived level of self-efficacy. The two emphasized aspects during the modeling phase were predictability and controllability. The hypothesis was that the predictability would facilitate in the decrease of the participant anxiety level when it was his or her turn to engage in the activity. During the modeling, with emphasis being on the controllability aspect, the models demonstrated successful techniques for controlling the threat in any situation that could present itself. The same measures were used for this experiment and the methodology for employing the measurements has not changed starting with an initial survey and continual ongoing probes as

tasks were engaged in by the participants. The results of the study indicated that “people successfully execute tasks that fall within their enhanced range of perceived self-efficacy, but shun or fail those that exceed their perceived coping ability” (Bandura, 1982, p. 126).

According to Bandura, “In social learning theory an important cognitively based source of motivation operates through the intervening process of goal setting and self-evaluative reactions” (Bandura, 1977a, p. 197). Self-motivation can be employed and sustained through scaffolding goals from smaller current goals to larger future goals. These proximal smaller goals lend to the enhancement of perceived self-efficacy. This form of self-motivation utilizes an internal comparison process and therefore requires the individual to have personal standards to measure against. Individuals who have personal standards create self-incentives for their efforts. The personal standards used to measure are factors such as satisfaction for undertaking an activity, gratification for the attempt, and other smaller intrinsically-based incentives. This form of proximal self-motivation can also facilitate interest in tasks that were once disvalued or perceived as being too difficult. Cognitive control plays a large part in social learning theory and greatly lessens the state of anxiety arousal within an individual. The individual can gain control over the anxiety arousal by making the event outcomes predictable (Bandura, 1977a). Those who have high self-efficacy demonstrated greater cognitive control over unknown situations by predicting possible outcomes from direct or vicarious experiences. The process of trusting in their coping self-efficacy and drawing upon previous experiences greatly reduced the anxious arousal that in many cases causes the individual to be either preoccupied with or debilitated by a negative emotional outcome, thus effecting their motivation and performance success (Bandura, 1977a).

Social Cognitive Learning Theory

According to Bandura, “Theories must demonstrate predictive power, and they must accurately identify causal factors, as shown by the fact that varying the postulated determinants produces related changes in behavior” (1971, p. 2). It is because of this idea that the investigation within the field has shifted from causal analysis of hypothesized inner determinants towards external factors that influence responsiveness and the interaction between these forces. Bandura stated, “In the social learning view, man is neither driven by inner forces nor buffeted helplessly by environmental influences. Rather, psychological functioning is best understood in terms of a continuous reciprocal interaction between behavior and its controlling conditions” (Bandura, 1971, p. 2). Because of this reciprocal learning determinate there are many processes that impact how an individual learns according to the social learning theory. The social learning theory places importance on three types of processes that impact learning: vicarious, symbolic, and self-regulatory. Each is manifested in different manners (Bandura, 1977b). Learning through direct experience allows for new patterns of behavior to be developed through direct application of the behavior or the observation of others achieving success with a certain type of behavior. Through the application and observation of behaviors it allows for the individual to engage in the process of differential reinforcement (Bandura, 1977b). Differential reinforcement allows for the individual to identify successful behaviors through exploratory activities or observed activities and to include them as being successful while simultaneously identifying unsuccessful behaviors to be discarded. This process lends support to the informative function of reinforcement where through the course of learning through direct experience and observation the information gathered is used to develop additional hypotheses in regard to behaviors that will be successful. Once the individual has the ability to develop hypotheses about behaviors that

will be successful this supports the process of motivational function of reinforcement (Bandura, 1977b). The process of motivational function reinforcement has a strong impact in incentive-motivation because individuals are more likely to engage in activities where they are able to accurately predict anticipated consequences (Bandura, 1977b). Bandura stated, “through the capacity to represent actual outcomes symbolically, future consequences can be converted into current motivators that influence behavior in much the same way as actual consequences” (1971, p. 3). Another critical aspect of social learning theory is the cognitive mediation of reinforcement effects; this is due to the fact that in order for individuals to learn the successful behavior they must be aware of the behavior that produced the successful outcome. Within social learning theory, the individual is not aware of the causality between the behavior and the outcome, when this occurs there is no known reason for the individual to reproduce the successful behavior (Bandura, 1977b).

Learning through modeling allows for the individual to acquire new behaviors through the influence of example. This allows for the acquisition of new and successful behaviors to be acquired without individuals having to run the risk of failure themselves (Bandura, 1977b). The establishment of new response patterns acquired during modeling procedures allows for the individual to shorten the time that it might otherwise take to learn the new behavior by first witnessing a competent model successfully demonstrate the behavior. According to social learning theory, this form of observational learning is primarily an informative cognitive process and observers enhance learning with the symbolic representation of the modeled behavior. There are several factors that impact the strength of observational learning with the first being the attention of the individual. If the observed behavior is not being attended to then critical factors of the modeled behavior will be missed by individual because they are not attending to the model

(Bandura, 1977b). Associational preferences of the individual is also an important factor when it comes to observational learning.

If the individual is not exposed to individuals modeling and engaging in the desired behavior they are more likely to mimic the individuals with whom they normally associate and utilize them as modeling agents even if these associates are not modeling the correct or desired behavior (Bandura, 1977b).

Observational learning relies on two forms of representational systems for it to be effective. These representational systems are imaginable and verbal. Under the imaginable representational system the individual employs a form of symbolic coding where upon recall elicits imagery association even in the absence of the model (Bandura, 1977b). Under the verbal representational system the individual employs a form of verbal coding where the cognitive process of the observation can be sequenced and articulated using language. Once these two processes of imaginable and verbal representation have been employed by the individual they serve as guides for successful reproduction of the behavior thus eliciting an expected and matching response (Bandura, 1977b).

The individual can reinforce the acquisition of the behavior through both mental and practical rehearsal. Delayed imitation of the behavior that is absent of the model is more impactful than immediate imitation of the behavior for the individual as this demonstrates that encoding and retention have occurred (Bandura, 1977b). According to Bandura, “motoric reproduction processes are the third component of modeling and is concerned with proceeded whereby symbolic representations guide overt actions” (1971, p. 8). The emphasis on this stage of observational learning allows the individual to construct scenarios with a given set of responses and apply meaning to them according to the modeled behavior in order to more

accurately predict outcomes. When the individual comes to realize that observing modeled behavior can facilitate in producing desired results and eliminating negative ones more attention will be given to the modeled behavior. Bandura stated, “In social learning theory, behavior is regulated, not only by directly experienced consequences from external sources, but by vicarious reinforcement and self-reinforcement” (1971, p. 10).

Self-Efficacy and Achievement Motivation

Prior research has illustrated a link between the concepts of self-efficacy and achievement motivation regarding student performance. I have included the research conducted by Aronson and Steele (2005) to help support the supposition that stereotypes imposed can impact student’ motivation and self-concept causing students’ to develop false expectations in regard to perceived levels of achievement.

Aronson and Steele (2005) investigated the impact of stereotypes on student academic competence, motivation and self-concept. The authors hypothesized that in situations involving academic competence stereotype targets will feel an additional burden and extra pressure not to fail and the extra burden will cause these individuals to perform less well than those not encumbered by the negative stereotype. Aronson and Steele conducted over one hundred studies since inception of the idea that stereotypes can negatively impact academic performance. During the initial stages of the research the authors’ initial hypothesis was “If concerns about confirming a negative stereotype undermine standardized test performance, then arranging situations to minimize those concerns should boost performance of individuals stereotyped as intellectually inferior. To those not stereotyped as inferior the change of the situation should have little or no effect on performance” (Aronson & Steele, 2005, p 441).

Aronson and Steele conducted a study using African-American and Caucasian college students and administered standardized tests using questions from the *Graduate Record Examination* (Aronson & Steele, 2005). The study was conducted under two types of testing conditions, *stereotype threat* and *no stereotypes threat*. In the stereotype threat condition students took the standardized test under normal testing conditions. During the no stereotype condition, students were informed that the test was a non-evaluative exercise and was being used to learn about the psychology on verbal problem solving. The results suggested that the initial hypothesis was correct and included that African American students performed better in the no stereotype threat condition than in the stereotype threat condition. Another result concluded that Caucasian test takers were not affected by the alternate framing of the test in the no stereotype threat administration. The authors noted concerns about the generalizability of the results so alternate administrations with different stereotyped groups such as women's ability to perform mathematics were administered. Additional administrations were conducted with these various groups and all former testing included similar results where there was markedly better performance for the stereotyped group under the no stereotype threat testing conditions. The researcher identified that "stereotype threat can impair the performance of even those groups who are neither minority nor broadly stereotyped as intellectually inferior" (Aronson & Steele, 2005, p. 443). Student self-concept in regard to ability was included as a contributor to performance and test taking esteem. Students with higher academic self-concept were less likely to be influenced by negative stereotypes because they were more self-aware of actual ability and able to assess academic strengths and weaknesses more accurately (Aronson & Steele, 2005). In additional studies, Aronson and Steele predicted that the effect of negative stereotypes on students would be less problematic for students who perceived abilities as being malleable. They

surmised that if the students perceived their ability as being malleable then they would perceive that there would be room for academic expansion with the appropriate effort. The idea that there is room for expansion would take the inferred power away from the negative stereotype allowing the students to view the negative stereotype as less threatening. A study was conducted by the researchers with student participants using the GRE verbal test. The study was presented to the students as being a test to identify if ability was malleable or fixed. Results of the study included that student anxiety was lessened and performance improved when the test administered was framed as assessing an ability that was not fixed and could be expanded upon with practice. This research lends credence to the current study under investigation by supporting the need for those students who are in a district that is classified as being at-risk could benefit by a program designed to increase self-efficacy (Aronson & Steele, 2005).

In addition to the research conducted by Aronson & Steele (2005) involving stereotypes effecting student academic competence, motivation and self-concept, Wolters, Fan, and Daugherty (2013) conducted research examining the impact of achievement and attribution goals on student academic functioning. According to Wolters, Fan, and Daugherty (2013) the purpose of the study was to investigate the extent that achievement goals and attribution goals might be used to explain indicators of students' academic functioning. The authors posed two hypotheses within the study. The first hypothesis stated that "mastery goals would be associated with a more adaptive set of attributions than would either performance-approach or performance-avoidance goals" (Wolters et al., 2013, p. 302). The second hypothesis presented by Wolters et al. stated that "we expected that mastery goals, attributions to effort and higher ability for success, and greater self-efficacy would each be associated with a pattern of increased behavioral engagement, strategy use, and achievement" (2013, p. 302).

Participants within the study consisted of 224 nine through twelfth grade high school students enrolled in one of the 13 Algebra II classes offered within the high school (Wolters et al., 2013). The researchers utilized two separate instruments to gather participant data, the first was a self-report survey that used a 7-point Likert type scale to report their individual beliefs and attitudes about the Algebra course that they were enrolled in at the high school. The second of the instruments measured student goal orientation and perceived self-efficacy (Wolters et al., 2013).

The data analysis procedures used to analyze the data were bi-variate correlation procedures followed up by two sets of hierarchical multiple regression procedures. The initial hierarchical multiple regression was used to determine if achievement, self-efficacy, and achievement goals could explain the types of attributions reported by the student participants. The second hierarchical multiple regression was used to examine if any of the motivational variables could predict participant engagement, strategy use, or achievement variables (Wolters et al., 2013).

The results included a positive correlation between self-efficacy and the success attributions such as effort ($r = .25, p < .001$), persistence ($r = .50, p < .001$), and choice ($r = .64, p < .001$) and a negative correlation to the failure attributions such as procrastination ($r = -.36, p < .001$). Performance approach orientation was correlated to fewer of the individual attribution goals but did have a positive correlation to success ability ($r = .40, p < .01$), while success attributions was negatively correlated to failure attribution ($r = -.24, p < .01$). The initial hierarchical regression included that achievement ($\beta = .14, p > .05$), and self-efficacy ($\beta = .63, p > .001$) were significant at predicting the attribute of success-ability as reported by the student participants. The second hierarchical regression included that the motivational variable

achievement could predict student engagement. The results included that persistence ($\beta = .26, p >.001$), choice ($\beta = .31, p >.001$), and procrastination ($\beta = -.22, p >.01$) were all significant at predicting student engagement. The second hierarchical regression also included that the motivational variable self-efficacy could predict student engagement. Results included that effort ($\beta = .17, p >.01$), student persistence ($\beta = .34, p >.001$), choice ($\beta = .45, p >.001$), and procrastination ($\beta = -.22, p >.01$) were also significant predictors of student engagement. The second hierarchical regression also included that the motivational variable self-efficacy could predict student learning strategies. Results included that fall achievement of self-efficacy was not a significant predictor of cognitive strategies used by the students (Wolters et al., 2013). However, fall achievement ($\beta = .15, p >.01$) was a significant predictor of metacognitive strategies used. Both fall achievement ($\beta = .66, p >.001$), and self-efficacy ($\beta = .22, p >.01$), were significant predictors of spring achievement. The research supports the use of both self-efficacy and achievement motivation within the current study under investigation.

Self-Efficacy and Task Persistence

The following section investigates the constructs of self-efficacy in relation to task persistence and achievement. The research included suggests there is a link between the construct of self-efficacy and students' persistence in the face of adversity, as well as, between self-efficacy and students' perceived level of achievement.

Breso, Schaufeli, and Salanova (2010) used the Social Cognitive Framework as a foundation to conduct a study to identify if a self-efficacy based intervention program could reduce student burnout, decrease levels of stress, and enhance performance. The intention of the program was to help students reduce their level of anxiety prior to exams and increase self-efficacious beliefs towards ability. The authors investigated the results of four hypotheses within

the study. Hypothesis One stated that “students in the intervened group would show higher levels of self-efficacy after conclusion of the study” (Breso et al., 2010, p. 342). The authors stated in Hypothesis Two that “students in the intervened group would show higher levels of engagement after conclusion of the study” (Breso et al., 2010, p. 342). The authors stated in Hypothesis Three that “students in the intervened group would show lower levels of burnout after conclusion of the study” (Breso et al., 2010, p. 342). The authors stated in Hypothesis Four that “students in the intervened group would show higher levels of academic performance after conclusion of the study” (Breso et al., 2010, p. 342).

The study conducted by Bresó et al. (2010) began with 66 students participating in a workshop that would help the students gauge their level of anxiety. Each of these 66 students was invited to participate in a one-on-one intervention program that would teach them how to better handle their anxiety. Out of the initial 66 students, the offer to participate in the intervention was accepted by 23 students. The intervened group consisted of 23 students who participated in the initial workshop and received the intervention program. The stressed control group consisted of 27 students who participated in the initial workshop but did not receive the intervention program. The control group was comprised of 27 students who were neither at the anxiety workshop nor participated in the intervention program and were enrolled in similar courses at the university as the intervened group. The intervention consisted of 4 two-hour sessions that were modeled after the traditional cognitive behavioral treatment for anxiety (Breso et al., 2010).

The instrumentation used by Bresó et al. (2010) to measure self-efficacy was a 5-point Likert type scale devised by Midgley et al. (2000). The self-efficacy scale measured student beliefs in regard to future success in academic achievement. Academic burnout was measured

using two subscales of the *Maslach Burnout Inventory* student survey. The selected subscales were exhaustion and cynicism. Academic engagement was measured using two subscales of the *Utrecht Work Engagement Scale* student survey. The selected subscales were vigor and dedication. The statistical methodology employed to analyze the data were descriptive statistics, correlation procedures and a multivariate test that included all the dependent variables previously mentioned (Breso et al., 2010).

The data analysis indicated that students participating within the treatment group experienced lower levels of anxiety through increased performance and engagement and these results in turn decreased student stress and burnout (Breso et al., 2010). The authors confirmed each of the hypotheses presented. Hypothesis One was confirmed and students in the intervened group demonstrated higher levels of self-efficacy after conclusion of the study ($F = 21.26, p < .001, \eta^2 = .91$). Hypothesis Two was confirmed and students in the intervened group showed higher levels of engagement, vigor ($F = 22.73, p < .001, \eta^2 = .43$) and dedication ($F = 14.67, p < .001, \eta^2 = .39$). Hypothesis Three was confirmed and students in the intervened group showed lower levels of burnout, exhaustion ($F = 19.68, p < .001, \eta^2 = -.46$) and cynicism ($F = 27.6, p < .001, \eta^2 = -.26$). Hypothesis Four was also confirmed and students in the intervened group demonstrated higher levels of academic performance ($F = 21.26, p < .001, \eta^2 = .70$). The results of this study support the purpose of the current study under investigation in that a self-efficacy based treatment program should have benefits to the participating students (Breso et al., 2010).

Self-Concept and Achievement

Jinks and Morgan (1997) conducted a study comparing the academic self-efficacy beliefs of students within inner city schools to students within suburban schools. The purpose of the study was to illuminate the idea that students' self-efficacious beliefs develops within the context

of the experience they have at school. The study specifically focused on academic efficacy in science achievement but the previously stated purpose extends beyond content boundaries. The authors chose not to make any hypotheses and instead used the data to identify need for additional research related to this topic within the science curriculum (Jinks & Morgan, 1997).

The authors used the *Morgan-Jinks Student Efficacy Scale* (MJSES) to gather information about student efficacy beliefs that relate to success. The statistical methodologies employed by the researchers were *t*-tests and correlation procedures on the data gathered from the 570 participants. The *t*-tests were used to identify if there were any significant differences between groups or subscale items (talent, effort, overall scale). Results included that there were no significant differences between any of the groups or subscales (Jinks & Morgan, 1997). Correlation procedures were also conducted and included positive relationships between science performance and the subscales of talent $\gamma^2(1, 570) = .53, p < .000$ and effort $\gamma^2(1, 570) = .35, p < .000$. Results also included a positive correlation between science performance and the overall scale, $\gamma^2(1, 570) = .40, p < .000$ (Jinks & Morgan, 1997). According to Jinks and Morgan, “The literature suggests that one’s sense of efficacy is learned, as opposed to being a deeper psychological construct, it would seem reasonable to explore curriculum designs that would focus on enhancing a students’ sense of efficacy”(1997, p. 4). The results of the study additionally support the current study under investigation and the potential impact of self-efficacy on success.

Elliott and Dweck (1988) also contributed to the body of research related to motivation. The researchers’ took a social-cognitive approach to motivation and presented a model that accounts for the underlying psychological processes related to motivation. The study conducted by Elliott and Dweck hypothesized, “that helplessness and mastery-oriented individuals might be

pursuing very different goals. The different perceptions and reactions of the students' might be a result of their different aims or purpose in the situation” (Elliott & Dweck, 1988, p. 6). It was suggested that students’ that perceive themselves as being helpless would pursue performance goals in an attempt to establish adequacy of ability. In contrast, students’ that perceive situations as being an opportunity to increase competency or skill level would pursue learning goals because they view these situations as opportunities to increase skill or performance. Elliott and Dweck tested the hypothesis by experimentally inducing performance and learning goal situations to participants and then observed the pattern of cognition and behaviors demonstrated by the participants. Results of the study illustrated that the initial hypothesis posed by Elliott and Dweck was correct. “The results showed the predicted relations. When children were oriented towards skill acquisition, their assessment of their present ability was largely irrelevant: They chose challenging learning tasks and displayed a mastery-oriented pattern” (Elliott & Dweck, 1988, p. 10). The results also illustrated that, “when children were oriented towards evaluation, the task they adopted and the achievement pattern displayed were highly dependent on perceived ability” (Elliott & Dweck, 1988, p. 10).

Kapikran (2012) conducted a study to examine the mediator role of self-handicapping and the moderator role of achievement goal orientations on the relationship between negative thoughts and achievement motivation. The author proposed two hypotheses for the study, the first hypothesis was that “as negative automatic thoughts decrease intrinsic motivation because of anxiety while the individual is doing the task, it is expected to decrease the individual’s success” (2012, p. 707). The second hypothesis presented by the author stated that “one of the factors affecting the intrinsic motivation positively is individual’s being learning oriented” (2012, p. 707).

The study used a self-report questionnaire administered to obtain personal demographic data about the 586 high school student participants within the study (Kapikiran, 2012). The Automatic Thought Scale (ATS) was used to assess the negative automatic thoughts of the students within the study. The *Self-Handicapping Scale* (SHS) was used with the participants to measure the self-handicapping behaviors of the students participating within the study. The *Motivation and Learning Strategies Questionnaire* (MLSQ) was also used to measure the students' intrinsic motivation to achieve. The statistical analysis procedures used to analyze the data collected were hierarchical regression first analysis and then followed by a correlation analysis (Kaprikan, 2012).

According to Kaprikan the results of the study included that “there was a significant relationship between learning goal orientation, self-handicapping, intrinsic motivation, and negative automatic thoughts” (2012, p. 708). Negative correlations were found between learning goal orientation and intrinsic motivation. The results of the study also included that the interaction effect of learning goal orientation on negative automatic thoughts and intrinsic achievement motivation as ($\beta = .25 \times .55 = -.14$). The study presented supports the idea that goal selection can be impacted by individuals' self-efficacious beliefs (Kapikiran, 2012).

Treatment Related Research

The following set of literature was researched and used to support the selection of the module topics that were included within the researcher created self-efficacy based improvement program (treatment) and potential impact on students within a district that has been classified as at-risk. The literature presented here supports and illustrates how the constructs of attributing success, scaffolding, selecting goals, coping skills, sustaining beliefs, and maintaining optimism have an impact on self-efficacious beliefs.

At-Risk Students

Cardone stated, “There is little known about why at-risk students would want to take technology education courses, how they value these courses, and [how] the value of technology education courses helps them remain in school” (2014, p. 51). The purpose of the study was to identify how at-risk students interact with a technology education curriculum. The two guiding questions included: “How do at-risk students respond to a technology education program?” (Cardone, 2014, p. 61); and “Why do at-risk students enroll in technology education programs?” (Cardone, 2014, p. 61). The author hypothesized that the hands-on component of the technology based instruction would help the at-risk learner move from passive learning to practical acquisition and use of knowledge (Cardone, 2014).

Initial research for the six-month qualitative study was done by analyzing previous case studies and then purposeful sampling was conducted to identify eight at-risk students to be included within the study. The eight students were informally observed and subjected to formal interviews and then document evaluation was conducted to obtain the data for the study. The three methods employed facilitated in triangulation of the data to ensure accuracy of the evidence gathered (Cardone, 2014).

The data analysis consisted of using the NUD*IST software to identify themes and collect supporting evidence (Cardone, 2014). The analysis included three primary themes construction of knowledge, hands-on learning, and problem solving. The results included that there was some evidence to support problem-solving theory but it was not consistent across all the at-risk students participating within the study (Cardone, 2014). Consistency was found across the participants regarding construction of knowledge and hands-on learning approach. Students’ identified during the interviews that they learned better using a hands on practical

approach as opposed to lecture or traditional book learning techniques (Cardone, 2014). The results of the study facilitated in justifying the design of the current study that is directed at students within a district that is classified as being at-risk.

The study conducted by Cardone (2014) identified how at-risk students interact with a technology education curriculum. The study focused on students' that had been labeled at risk, students' were qualified as being at-risk by using a series of triangulated measures. Kirby, Nataraj, Naftel and Berends conducted a longitudinal study of Texas school districts from 1979 to 1999 with the purpose of identifying "what constituted an *at-risk* school district, what characteristics differentiate them from other districts and how to staff them" (1999, p. 9). The results of the study included *at-risk* districts as those "districts [that] serve a large number of students at risk of educational failure" (Kirby et al., 1999, p. 9). These districts exhibited certain characteristics that put them in the at-risk category. These characteristics included a high percentage of economically disadvantaged families, low student attrition rates, low student test scores, high dropout rates, increasing numbers of economically disadvantaged minority students, and low teacher retention rates (Kirby et al., 1999). The current study under investigation will use all of the variables identified by Kirby et al. (1999), the researcher will consider a district as being labeled at-risk if it meets a minimum of 3 of the qualifying variables identified by Kirby et al. (1999).

Scaffolding

Lodewyk and Winne (2005) studied the variation in student self-efficacy over a period of time in relation to two types of task, well-structured tasks and ill-structured tasks. Well-structured tasks have straight forward operations such as constructing products and predictable evaluations whereas ill-structured tasks are not solved in a linear straight forward process. The

authors had four hypotheses that were being tested. Each hypothesis related to the structure of tasks and questioned whether ill-structured tasks or well-structured tasks have an impact on student perception of achievement and self-efficacy. The first two of the four hypotheses related to student's perception of difficulty related to the structure of the tasks and the last two related to student's self-efficacy related to the structure of the tasks. The first hypothesis stated, "We predict students would perceive more difficulty with and have lower achievement scores on an ill-structured task than on a well-structured task" (Lodewyk & Winne, 2005, p. 4). The second hypothesis stated, "We hypothesized that students with higher prior academic achievement would report more difficulty in completing a well-structured task than an ill-structured task" (Lodewyk & Winne, 2005, p. 4). The third hypothesis stated that "levels of self-efficacy for learning and self-efficacy for performance would be initially lower on the ill-structured task than on the well-structured task" (Lodewyk & Winne, 2005, p. 5). The fourth hypothesis stated, "We predicted that self-efficacy for learning would be lower than self-efficacy for performance on both tasks" (Lodewyk & Winne, 2005, p. 5).

The study consisted of 89 volunteer participants who spanned across four separate classrooms all with the same instructor. There were 45 males and 44 females participating in the study. The student participants were tracked utilizing two separate achievement groups. The first group tracked student self-efficacy for learning (SEL) and the second tracked Student self-efficacy for performance (SEP). Lodewyk and Winne state that "Self-efficacy for learning involves judgements about one's ability to accomplish a particular task as well as one's confidence in one's skills to perform that task" (Lodewyk & Winne, 2005, p. 4). It is also stated that, "Self-efficacy for performance relates more to one's expectancy for success or achieving a desired outcome (Lodewyk & Winne, 2005, p. 4). The participants were then administered

several tasks spread out over the semester. The tasks that were administered were purposefully created to either be ill-structured or well-structured. Well-structured tasks were scaffolded for the participants and included organizers, readily accessible resources and reflection prompts. Three statistical measures were used within the study, the measures were *Motivated Strategies for Learning Questionnaire* (MLSQ), the *Self- and Task-Perception Questionnaire* (STPQ), and a questionnaire related to achievement and perceptions of task difficulty. Each of the three measures was a self-report questionnaire. The MLSQ was utilized as a pre and post-test; the STPQ was administered 6 times throughout the study at regular intervals; and the questionnaire related to achievement and perceptions of task difficulty was administered once prior to the inception of the study. The authors used *t*-test to analyze hypotheses one, two and four in an attempt to explore the effects. Hypothesis Three was analyzed using multivariate analysis of variance two separate times; once for learning and another for self-efficacy, as related to student performance (Lodewyk & Winne, 2005).

The results for Research Question One included that “students achievement on the project did not differ as a function of the type of task ($t(88) = -1.38, p = .17, \eta^2 = .15$). The results for Research Question Two included that the moderate academic achievement group was the only one to generate statistically significant results for reporting more difficulty in completing a well-structured task as opposed to an ill-structured task ($t(36) = -2.66, p = .01, \eta^2 = .70$). The results for Research Question Three included a statistically significant difference for the multivariate analysis of variance performed for both self-efficacy for learning ($F(6,58) = 5.70, p < .001, \eta^2 = .37$) and self-efficacy for performance ($F(6,58) = 3.94, p < .002, \eta^2 = .29$). The results for Research Question Four included that for well-structured tasks self-efficacy for performance was stronger than self-efficacy for learning ($t(88) = 6.60, p = .001, \eta^2 = .15$). The results included a

significant increase in the mean scores for both types of self-efficacy when provided well-structured tasks. The results generated and analyzed for each of the aforementioned hypotheses supports the inclusion well-structured tasks that are scaffolded for the participants and include readily accessible resources and reflection prompts (Lodewyk & Winne, 2005).

Keyser and Barling (1981) conducted two separate studies to assess the determining factors for children's academic self-efficacy. The first study "assessed the effects of performance accomplishments, modeling, locus of control, and their interaction on children's self-efficacy beliefs" (Keyser & Barling, 1981, p. 29). This study included 504 participants within the sixth grade along with 16 classroom teachers at six different middle schools. The second study "assessed whether contextual factors together with performance accomplishments and modeling account for more of the variance in self-efficacy beliefs" (Keyser & Barling, 1981, p. 29).

The first study used the *Children's Self-Efficacy Beliefs Scale* designed to assess the self-efficacy beliefs of the student participants. This is a 20-item questionnaire using a 5-point Likert type scale used to assess efficacy estimations of the student participants. The authors also used the *Wide Range Achievement Test* to measure performance accomplishments. A teacher's self-efficacy scale was created to measure the modeling effects of the teachers and was presented in a similar fashion to that of the instrument used for the students. The last instrument used was the *Intellectual Achievement Responsibility scale* that is used to measure the beliefs in regard to locus of control relating to academic situations (Keyser & Barling, 1981).

The study used a stepwise regression analysis to measure the relative importance of the independent variables (Keyser & Barling, 1981). Results of the statistical analysis included that the only significant results were for the main effects of the three modeling terms performance

accomplishments ($F(2, 500) = 10.91, p < .01$), modeling ($F(2, 500) = 65.10, p < .01$), locus of control ($F(2, 500) = 90.31, p < .01$). There were not any significant subscales reported for either performance accomplishments or locus of control (Keyser & Barling, 1981).

Each of the main effects was significant, the only interaction that demonstrated significance was that of Locus of Control x Modeling (Keyser & Barling, 1981). This interaction explained 28% of students' scholastic self-efficacy beliefs and included that students with a greater external locus of control were more susceptible to modeling practices. The modeling practices allowed the students, through direct observation, the ability to more adequately self-scaffold individual tasks (Keyser & Barling, 1981).

The participants used within the first study were also used within the second study. In the first study the authors hypothesized that self-efficacy includes both efficacy expectations and resulting response outcome behavior. The second study assessed the contribution of performance accomplishments in combination with contextual factors to determine the influence of these factors in combination with one another (Keyser & Barling, 1981).

The second study used all the instrumentation from the first study along with three additional measures (Keyser & Barling, 1981). The additional scales were a 36-item shortened form of the *Classroom Environment Scale* which was used to assess the perceptions of the classroom climate. The second additional scale used was the *Arlin and Hills 14-item Attitude to Learning Processes* and the last additional scale used was the 15-item *Attitude Towards Teachers Scale*. The purpose of these scales was to measure preferences for formal or open [unstructured] teaching styles (Keyser & Barling, 1981).

Results of the study indicated that attitudes towards learning were not significant ($F(2, 500) = .13, p > .05$). The results indicated significance for student participation ($F(2, 500) =$

12.21, $p < .01$), , modeling ($F(2, 500) = 4.86, p < .01$), and contextual variable rule specification ($F(2, 500) = 5.18, p < .01$) (Keyser & Barling, 1981). The results of the study presented support the overall design of the current study under investigation.

The Keyser & Barling study conducted in 1981 illustrated that modeling and student participation were significant factors accounting for some variance in students' beliefs regarding self-efficacy (Keyser & Barling, 1981). Since modeling and participation are integral steps in scaffolding this construct should also be investigated in relation to the current study. In 2009, Liang and Richardson conducted a study that “investigated the effects of a recently revised science course that engaged the prospective teachers in a scaffolded, student-directed inquiry unit on local streams by examining whether [or not] the teacher candidates' personal science teaching efficacy beliefs were changed” (2009, p. 51).

The participants of the study included two instructors and 54 prospective elementary education pre-service teachers at a small university in the Mid-Atlantic area of the United States (Liang & Richardson, 2009). Over 90% of the sample were female Caucasians and in their second year of teacher training. The instrumentation used was a questionnaire where students responded to metacognitive questions in the unit summary section. The *Science Teaching Efficacy Belief Instrument* (STEBI) was used to measure science teaching self-efficacy. The STEBI was administered as a pre and post-test at the beginning and end of the semester. Participants were asked to respond to 23 statements related to efficacy on a 5-point Likert type scale. The statistical methodology used within the study consisted of a repeated measure analysis of variance with between subject factors. The ANOVA was conducted to measure the impact of the intervention on the teaching efficacy beliefs of the participants within the study (Liang & Richardson, 2009).

The results of the study showed that teachers actively engaged in the stream scaffolding and direct inquiry program had an increase in personal beliefs about their teaching efficacy when considering the interaction between time and group, $F(1,53) = 7.23, p < .01$ (Liang & Richardson, 2009). The results of the study supported the inclusion of scaffolding as a module topic within the current study and demonstrated the importance of the practice for teachers as well as teacher candidates (Liang & Richardson, 2009).

Selecting Goals

According to Grant and Dweck (2003), demonstrating how learning goals are operationalized effects the impact they have on student learning. Grant and Dweck stated that “active learning goals predicted active coping, sustained motivation and higher achievement in the face of challenge” (2003, p. 541). The study investigated how the impact of learning and performance depend upon how they are operationalized within the classroom setting. According to the authors, “The effects of learning and performance goals on motivation and achievement have been tested under a wide variety of circumstances” (Grant & Dweck, 2003, p. 543). The authors hypothesized that the effects of goal setting on motivation, coping, and achievement are more substantial when the degree of difficulty is high and the outcome is of high importance (Grant & Dweck, 2003).

The study consisted of 451 undergraduate student participants from Columbia University. Participants were paid five dollars for participation and were asked to complete a goal inventory that included three of each of the goal types under investigation. The goal inventory was the only instrumentation used in the study; and the goals under investigation were ability goals, outcome goals, normative outcome goals, normative ability goals, learning goals, and challenge-mastery goals. The statistical procedures used to analyze the data were a confirmatory factor

analysis (CFA) and correlation procedures used among the different classes of goals (Grant & Dweck, 2003).

It was determined from the factor analysis that the model presented was a good fit and consistent with the three primary factors included as learning goals, outcome goals, and ability goals. The results derived from the correlation procedures yielded the results that outcome goals are correlated with achievement goals $r = .53, p < .001$ (Grant & Dweck, 2003). Additional results have shown that learning goals were positively related to outcome goals, $r = .34, p < .001$; ability goals, $r = .17, p < .001$, and normative goals, $r = .52, p < .001$ (Grant & Dweck, 2003). Grant and Dweck stated, “It appears that individuals who value achievement may value many aspects of it, we will see that clearly distinct and unique patterns are associated with each type of goal” (2003, p. 544). The results of this study helped to justify two of the module topics (goal selection and coping ability) contained within the current study (Grant & Dweck, 2003).

Grant and Dweck (2003) investigated how the impact of learning and performance depend upon how they are operationalized and the study illustrated that learning goals were positively related to outcome goals, it serves our study well to investigate motivations related to mastery goals. Ames and Archer (1988) studied how motivational processes are related to mastery goals and performance goals for students’ within the classroom. The authors hypothesized that students’ perceptions of the classroom goals to be related to how they approached, engaged in, and responded to learning tasks (Dweck, 1986, p. 261). The population consisted of 176 students in grades 8 through 11 who attended schools for academically advanced students. Out of the 176 students four to six students were selected from each English, math, science, and social studies classes and were asked to respond to the questionnaires provided. The questionnaires used within the study included scales related to goal orientation,

learning strategies, task challenge, and attitude towards success, causal attribution, and perceived ability. Statistical procedures used within the study included correlational analysis, regression analysis, and group comparisons (Ames & Archer, 1988).

The results included that when students perceived an emphasis on mastery goals they were reported as being more engaged, used more learning strategies, and had a more positive attitude (Ames & Archer, 1988). Results from the regression analysis showed that students' perceived ability was a significant predictor of learning strategies ($F(3, 172) = .03, p < .05, r = .49$), task choice ($F(3, 172) = .07, p < .001, r = .34$), and attitude ($F(3, 172) = .06, p < .001, r = .63$). Ames and Archer stated, "Patterns and strength of the findings suggest that the classroom goal orientation may facilitate the maintenance of adaptive motivational patterns when mastery goals are salient and adopted by the students" (1988, p. 260). The results of this study supported the inclusion of goal setting as a module topic within the current study (Ames & Archer, 1988).

Hsieh, Sullivan, and Guerra (2007) conducted a study where the goal "was to link the two areas of research (goal orientation and self-efficacy) by examining the interaction between students' goal orientation and self-efficacy and investigate how students with varying self-efficacy levels and academic standings differ in their adoption of academic goals and college achievement" (p. 459). The research questions were used to investigate the relationship between student self-efficacy scores and achievement on each of the goal orientation scales. Successful students were identified as having a GPA score of above a 2.0 and unsuccessful students below a 2.0 (Hsieh et al., 2007). The purpose of the authors' research was to see how cognitive beliefs and goals contribute to college student retention and to help identify those students who were at-risk of dropping out. The research was guided by two essential questions. Question One stated, "How well do student scores on the self-efficacy and each of the goal orientations scales predict

achievement?” (Hsieh et al., 2007, p. 459). Question Two stated, “Are successful and unsuccessful students different in terms of their self-efficacy levels?” (Hsieh et al., 2007, p. 459).

Participants included in the study were 112 volunteer undergraduate students from a Southwestern university serving a largely Hispanic population. The population included 60 students who had been placed on academic probation and 52 students in good standing (Hsieh et al., 2007). The students who were on academic probation prior to the start of the semester were asked to attend a 3-hour workshop that addressed resources for student support and taught strategies for academic success. Students not on academic probation received no workshop prior to the semester and both groups of students were asked to complete two separate questionnaires related to perceived academic self-efficacy. The two measures used were the *Patterns of Adaptive Learning Survey* (PALS) and the *Achievement Goal Orientation Inventory* (AGOI). Each of the questionnaires presented the students with statements and participants were asked to rate the statement on a 5-point Likert type scale ranging from strongly agree to strongly disagree. The statistical procedures used included correlation procedures across all measures for research question one and an ANOVA and 2x2 MANOVA for research question two (Hsieh et al., 2007).

The results determined that there was a positive correlation between student GPA and student self-efficacy ($r = .36, p < .01$) and goal orientation scores ($r = .40, p < .01$). However, no significant relationship was found between GPA and performance goals. Research question two included that there was a significant difference in goal adoption between successful and unsuccessful students, $\lambda = .80, F(3, 90) = 7.68, p < .001$ (Hsieh et al., 2007). There was also a significant difference in goal adoption between students with high and low self-efficacy scores, $\lambda = .86, F(3, 90) = 5.04, p < .003$ (Hsieh et al., 2007). These results are consistent with previous

studies and help justify the topic of goal selection as a module topic within the research study under investigation (Hsieh et al., 2007).

The study conducted by Hsieh et al. (2007) illustrated a positive correlation between student GPA and student self-efficacy, due to these results and because our study involved students within a district classified as being at-risk it would benefit the study to examine levels of self-efficacy among at-risk students. Carroll, Gordon, Haynes, and Houghton (2013) investigated the levels of self-efficacy among delinquent, at-risk and not at-risk secondary education students and their characteristics for goal setting. Within the context of the study, the researchers tested four separate hypotheses all related to self-efficacy and goal setting. Hypothesis One, “Group membership will predict the types of goals set.” Hypothesis Two, “The three risk level groups (delinquent, at-risk, not at-risk) will differ in number of goals and specificity, challenge, and commitment to those goals.” Hypothesis Three, “The three risk level groups will differ in their academic, self-regulatory, sporting, and social self-efficacy.” Hypothesis Four, “Risk group membership will be predicted by self-efficacy and the number, specificity, challenge, and commitment to goals” (Carroll et al., 2013, p. 433).

The database comprised of 1,460 participants of secondary school age. The participants of the study were either in one of 10 secondary education institutions or in a juvenile correctional institution. The three groups delinquent, at-risk, not at-risk were created from the data, each group comprised of 100 participants with equal compositions of gender between groups. (Carroll et al., 2013). Three separate instruments were used to collect the data. The *Goal Types Scale* (GTS) was used to determine the types of goals measured by adolescents, participants were asked to list and rank order up to eight life goals in order of importance. Goal commitment was measured using a 9-item self-report scale developed by Hollenbeck, Williams, and Klein (1989).

Participants were asked to respond to statements using a 4-point Likert type pictorial scale. Self-efficacy was measured using the *Children's Self-Efficacy Scale* where participants are asked to rate their belief in their level of capability for the designated activity (Carroll et al., 2013).

Results for Hypothesis One, "Group membership will predict the types of goals set" (Carroll et al., 2013, p. 433) revealed that individuals with high educational and interpersonal goals were more likely to belong to the not at-risk group (score = .743). The results for Hypothesis Two, "The three risk level groups (delinquent, at-risk, not at-risk) will differ in number of goals and specificity, challenge, and commitment to those goals" (Carroll et al., 2013, p. 433) indicated that this prediction was partially supported and there were differences between the three groups and the types of goals selected. A Chi Square procedure included a significant association between adolescent groups and specificity, ($X^2 = 13.23, p = .04$). There were clear differences between all the groups as related to commitment goals but only between the delinquent and at-risk group for challenge goals (Carroll et al., 2013). The results for Hypothesis Three, "The three risk level groups will differ in their academic, self-regulatory, sporting, and social self-efficacy" (Carroll et al., 2013, p. 433).indicated moderate correlations between all types of self-efficacy between the three groups. The most significant correlations for all the groups were for academic self-efficacy and regulatory efficacy ($r = .52, p < .01$). The results for Hypothesis Four, "risk group membership will be predicted by self-efficacy and the number, specificity, challenge, and commitment to goals" (Carroll, 2013, p. 433) revealed that the best predictors for risk group membership were goal type, self-regulatory efficacy ($F(3, 297) = .48, p = .001$), and goal commitment ($F(3, 297) = .30, p = .013$). Results for each of the four hypotheses tested within the study provide support for goal setting being selected as a module

topic within the study for a self-efficacy based improvement program being tested within the current study (Carroll et al., 2013).

Coping Skills

Frydenberg and Lewis (2009) stated, “How one copes influences not only subjective wellbeing but also self-efficacy and can have broader influences on one’s relationships, aspirations and academic performance” (p. 51). The study investigated and attempted to correlate perceived self-efficacy with the use of productive coping skills. The authors hypothesized that there will be a positive relationship between perceptions of low problem-solving effectiveness and use of non-productive coping strategies among adolescents. Two independent data sets were investigated within the context of the study. The data sets were gathered by a trained teacher who acted as a research assistant during the data collection procedures. Data were collected during two separate administrations that were held three years apart and included 200 adolescents between the ages of 12 and 18 who attended secondary schools in Melbourne, Australia (Frydenberg & Lewis, 2009).

During the two administration sessions the data were collected using the *Adolescent Coping Scale* (ACS), which is a survey related to measure the frequency of usage and ability to use coping skills. The ACS was scaled down to 18 items from the original 79 closed response items originally included. Two forms were then created: a general form to determine how an individual may cope with concerns and a specific form that enables measurement of responses to a particular concern. Correlation procedures were conducted to identify the frequency of use for the coping strategies and perceived problem solving efficacy (Frydenberg & Lewis, 2009).

The results of the study included a statistically significant correlation between perceived self-efficacy and productive coping skills at a significance level of ($p < .001$). Although a

correlation study does not predict causality it can be argued that these results support the use of coping skills as a module within the self-efficacy based improvement program being tested within the current study (Frydenberg & Lewis, 2009).

The previous study conducted by Frydenberg & Lewis (2009) identified a correlation between perceived self-efficacy and productive coping skills. The correlation suggests that it is beneficial to examine a study conducted by Litt, Kadden and Stephens (2005) to identify if a coping skills based treatment program for marijuana dependence enhanced the participant use of coping skills as compared to traditional forms of treatment such as motivational enhancement treatment (MET). According to Litt et al., “Coping instruction is accomplished by teaching and rehearsing various skills, through an educational process intended to enhance a person’s coping skills, confidence, or self-efficacy, in his or her ability to stay abstinent” (2005, p. 1015).

The authors tested three hypotheses within the study and only one of the three hypothesis proposed succeeded in supporting a prediction. The hypothesis that met the criterion of the model and the one that was tested proposed that “treatment predicted self-efficacy change, [and] that self-efficacy change would in turn drive coping change” (Litt et al., 2005, p.1022). The study was conducted at the University of Connecticut and included 155 volunteer participants. The participants were solicited through advertisements placed in local media sources and initially 398 individuals volunteered for the study. After a volunteer screening, a sample of 155 participants met the criteria to be included within the study. Participants of the study were excluded if they were currently in a marijuana treatment program, admitted to using additional illegal substances besides marijuana, or were identified as needing immediate psychiatric treatment (Litt et al., 2005).

Measurements used within the study included the *Time Line Follow Back* survey developed by Sobell and Sobell (1992) that consisted of interviews and questionnaires to assess the quantity and frequency of substance abuse. Participants were also administered the *Addiction Survey Index* (ASI) to measure the severity of medical, legal, alcohol and drug related problems. Statistical methodology employed general linear models and mixed models to analyze the differences between groups and partial correlations were also used to examine the relationship between usage and coping scores (Litt et al., 2005).

The results of the study conducted by Litt et al. (2005) did not support increased usage of coping skills through the use of the coping skills based treatment program compared to traditional programs in use such as motivational enhancement therapy. However, traditional programs such as the MET identified that the use of coping skills and treatment type was predictive of relapse. Self-efficacy as a variable was statistically significant and influenced the outcome ($F(2,155) = .44, p > .008$). This justified the inclusion of coping skills as a module topic in the current study. Litt et al. suggested that coping skills are a critical part of abstinence treatment for marijuana users, but “the mechanisms of coping skills (within the new treatment program studied) may need to be re-conceptualized” (2005, p. 1015).

Sustaining Beliefs

Raftopoulos and Bates conducted a study “to explore the relevance of spirituality to adolescent resilience” (2011, p. 155). A longitudinal qualitative study was conducted to explore the nature of spirituality and resilience among at-risk adolescents as well as their conception of spirituality and relation to spirituality. The researchers used grounded theory techniques and conducted in-depth one-on-one interviews relating to the role of spirituality within their lives.

The researchers used a qualitative approach as they did not believe a quantitative measure would permit a full exploration of the topic (Raftopoulos & Bates, 2011).

There were 15 participants who volunteered for the study; the 15 participants were either sophomores or juniors in high school. The researcher coded the data gathered from the interviews and included the emerging main themes within the interviews. Focused coding was then applied and the researcher identified categories that emerged through comparison of the data relating to the participants' beliefs and experiences (Raftopoulos & Bates, 2011).

The results suggested that spiritual well-being has a relationship with anxiety levels in at-risk adolescents. The results included that among the participants', spirituality was an important factor when dealing with low-point experiences. This supports the inclusion of a module pertaining to sustaining beliefs within the current study. According to Raftopoulos and Bates, "Spirituality fostered resilience by providing a sense of protection, comfort and security through a relationship with a higher power, the opportunity for increased self-awareness and self-efficacy through a connection with the inner self and a sense of coherence, purpose and optimism from the belief that everything happens for a reason" (2011, p. 163).

The study conducted by Raftopoulos & Bates (2011) illustrated that well-being has a relationship with anxiety levels in at-risk adolescents; due to these results it would benefit the current study to explore the related construct of hope. Phan investigated "the initial states and rate of growth of secondary school students' academic self-efficacy and their sense of hope" (2013, p. 93). The researcher acknowledges that hope as a construct related to self-efficacy, is in its infancy within the field of literature related to self-efficacy. The researcher states, "The relationship between self-efficacy and hope is argumentative and suggests the possibility of reciprocity. Recent research has reported a positive association between self-efficacy and

hope. The author hypothesized that the findings will help provide a theoretical grounding in the developmental course of self-efficacy and hope” (Phan, 2013, p. 93).

The researcher conducted a longitudinal study over the course of two years collecting data on four separate occasions and included 196 participants (Phan, 2013). The data collection instrument used was the *Latent Growth Model*. This consisted of a questionnaire that contained items related to self-efficacy and hope. Participants responded to statements in the questionnaire using a 7-point Likert type scale, the sub scale of self-efficacy was measured using the *Patterns of Adaptive Learning Survey* (PALS) which was included within the *Latent Growth Model Questionnaire* (Phan, 2013). The subscale of hope was measured using the *Hope Scale* developed by Snyder et al., the scale included a 12-item inventory designed to measure relevant aspects of the construct of hope. The researcher conducted *Structural Equation Modeling* (SEM procedures) to identify if a relationship existed between one or more independent variables of self-efficacy and hope, SEM procedures to initially analyze the data and then conducted multivariate growth curve to examine the relations between the growth functions of the subscale constructs of self-efficacy and hope. The researcher also conducted a multivariate analysis of variance to (MANOVA) to explore gender differences in relation to the two variables (Phan, 2013).

The results showed that hope and self-efficacy were positively correlated and the intercept mean and slope illustrated that self-efficacy and hope change over a period of time (Phan, 2013). Results showed that students with initially lower levels of self-efficacious beliefs for learning within the academic environment showed a faster increase in levels of hope over time (Phan, 2013). This suggested the module topics for sustaining beliefs via hope and optimism is appropriate to be included within the current study.

Maintaining Optimism

According to Hsu, Hou, and Fan, “When employees’ creative self-efficacy is high, those with greater optimism exhibit greater innovative behavior at work” (2011, p. 258). The study examined the relationship among creative self-efficacy, optimism, and innovative behavior, used optimism was used as a moderator within the study. The underlying theoretical background for this research was grounded in the work of Bandura’s *Social Cognitive Theory* (1977b). The authors proposed three separate hypotheses within the study. Hypothesis One stated, “Employees with a high level of creative self-efficacy will demonstrate a high level of innovative behavior” (Hsu et al., 2011, p. 261). Hypothesis Two stated, “Employees with a high level of optimism will demonstrate a high level of innovative behavior” (2011, p. 262). Hypothesis Three stated, “Optimism will moderate the relationship between creative self-efficacy and innovative behavior. Employees with a high level of creative self-efficacy will have a higher level of innovative behavior when they have a high level of optimism” (Hsu et al., 2011, p. 261).

The researchers conducted a longitudinal study and collected data over two periods first surveying 340 respondents and then subsequently resurveying 200 of these initial 340 individuals (Hsu et al., 2011). The researchers obtained 120 of the 200 secondary surveys sent out giving them a population of 120 participants for the study (Hsu et al., 2011). Instrumentation used within the study included a the questionnaire that consisted of creative self-efficacy, optimism, and innovative behavior scales. The statistical methodologies employed by the researchers within the study were correlation procedures and a hierarchical regression analysis (Hsu et al., 2011, p. 261).

Results of the study supported two of the three hypotheses proposed. The results supported hypothesis one that proposed employees who have a high sense of creative self-

efficacy demonstrated a higher level of innovative behavior at work ($\gamma = .42, p < .01$). The results also supported hypothesis three, proposing that optimism would act as a moderator between creative self-efficacy and innovative behaviors among employees ($\beta = .18, p < .05$). The results of the study supported the inclusion of optimism being selected and utilized as a module topic within the current study under investigation (Hsu et al., 2011).

Wisner conducted a study that researched “the degree to which psychological capital constructs of self-efficacy, hope, optimism, and resiliency predict student scores on the Student Leadership Practices Inventory” (2011, p. 361). Wisner hypothesized that psychological strengths would act as predictors of effective student leadership (Wisner, 2011). The study included 153 participants in leadership positions within five separate universities. Wisner used the *Student Leadership Survey* (SLT) as the primary measure within the study. The SLT was a collection of several smaller measures that were compiled into one survey. The smaller measures included were the *Psy-Cap Questionnaire*, the *Strength Ownership Scale*, and the *Student Leadership Practices Inventory*. The *Psy-Cap Questionnaire* measured predictor variables for hope, optimism, and resiliency. The *Strength Ownership Scale* measured the degree to which an individual adopts and applies a philosophical strength to leadership. The *Students Leadership Practices Inventory* was used to identify specific and effective practices used by student leaders (Wisner, 2011).

The statistical methodology employed was the use of a hierarchical multiple regression that was used to analyze the contribution of psychological and strength ownership factors to the student leadership ratings that were gathered from the SLT and utilized as the criterion variable within the study (Wisner, 2011). The findings suggested that the primary predictor of leadership ratings was found in the hope subscale derived from the *Psy-Cap* portion of the SLT ($\beta = .379, p$

> .001). Efficacy and optimism derived significant results on two of subscales contained within the *Student Leadership Practices Inventory*. Efficacy demonstrated significant results on the SLIP subscales of inspire a shared vision ($\beta = .246, p > .05$) and encourage the heart ($\beta = .270, p > .01$). Optimism demonstrated significant results on the SLIP subscale enable others to act ($\beta = .192, p > .05$) and encourage the heart ($\beta = .163, p > .05$). Self-efficacy and motivation were significant predictors of goal-oriented thinking and goal-oriented practices. These results suggested that increased levels of student self-efficacy have a predictive relationship to goal selection and support the inclusion of motivation as a module topic within the current study (Wisner, 2011).

CHAPTER 3: METHODOLOGY

The purpose of the study was to determine the impact of a researcher created intervention program on student's levels of General Self-Efficacy and Achievement Motivation. The participants were in a school district that was classified as being at-risk. This chapter provides a complete description of the methodology employed to conduct the study and details the research questions and hypothesis, setting and sample, research design, instrumentation, treatment program, data collection methods, procedures and timeline, description and justification of data analysis, limitations of the study, and the statement of ethics and confidentiality.

Research Questions and Hypothesis

The research addressed the impact on self-efficacy and achievement motivation of students within an at-risk school district, the treatment group participated in the researcher created Self-Efficacy Based Improvement Intervention and the comparison group received no intervention of any type. The following questions and hypotheses guided the study:

Research Question One: Is there a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' General Self-Efficacy?

- a. Is there a significant main effect in General Self-Efficacy for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program?
- b. Is there a significant main effect in General Self-Efficacy between male and female students?
- c. Is there a significant interaction for group membership and gender with respect to General Self-Efficacy?

Non-directional Hypothesis: There will be a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' General Self-Efficacy

- a. There will be a significant main effect in General Self-Efficacy for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program.
- b. There will be a significant main effect in General Self-Efficacy between male and female students.
- c. There will be a significant interaction for group membership and gender with respect to General Self-Efficacy.

Research Question Two: Is there a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' Achievement Motivation?

- a. Is there a significant main effect in Achievement Motivation for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program?
- b. Is there a significant main effect in Achievement Motivation between male and female students?
- c. Is there a significant interaction for group membership and gender with respect to Achievement Motivation?

Non-directional Hypothesis: There will be a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' Achievement Motivation.

- a. There will be a significant main effect in Achievement Motivation for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program.
- b. There will be a significant main effect in Achievement Motivation between male and female students.
- c. There will be a significant interaction for group membership and gender with respect to Achievement Motivation.

Setting and Sample

Research setting. Meetings were held with 4 separate school districts that met the criteria of being labeled as at-risk within the state of Connecticut, a sample of convenience was used for the study within the only district that would grant us access to conduct the study. The study was conducted within an inner-city high school in an urban district in Connecticut that has been classified as being at risk. The term *at-risk* was derived from the research and is defined as “Districts who serve a large number of students at risk of educational failure” (Kirby et al., 1999, p. 9). Kirby et al. (1999) identified six qualifying factors that classify a district as being at-risk. Kirby et al. (1999) identified at-risk districts as having or exhibiting certain characteristics such as a high percentage of economically disadvantage families, low student attrition to higher education, higher than average student dropout rates, lower than average scores on state achievement tests, low teacher retention rate, and increasing number of economically disadvantaged minority students. School selection was conducted utilizing strategic school profiles to identify a school community that met a minimum of three of the six characteristics identified by Kirby et al. (1999). For the purpose of this study, if the school district met three or more of the identified criteria it was qualified to be included within the study.

Districts were initially selected utilizing strategic district profiles to identify districts that met a minimum of three of the six qualifying characteristics. Kirby identified at-risk districts as having or exhibiting the following characteristics: (a) a high percentage of economically disadvantage families, (b) low student attrition to higher education, (c) higher than average student dropout rates, (d) lower than average scores on state achievement tests, (e) low teacher retention rate, and (f) increasing number of economically disadvantaged minority students (Kirby et al., 1999). District selection was then continued by having meetings with 4 separate district superintendents to discuss the nature of the study and see if they would grant us access to conduct the study. Out of the four districts only one allowed us to proceed. The school that was selected for the study was within a district that met the qualifying characteristics and the school itself was of average size within the district and was the only school building where we had the permission and support of the building principal.

The three characteristics that qualified this particular district for inclusion within the study were a high percentage of economically disadvantaged families, lower than average scores on state achievement tests, and higher than average student dropout rates. The district has a high percentage of economically disadvantage families at 26.4% with an average per capita income of \$16,393 and 85% of students within district qualifying for free or reduced lunch as compared to the state average of 36.7%. State achievement test scores were lower than average in all subject areas for the Connecticut Academic Performance Test (CAPT). District reading across the disciplines scores were $M = 19.8\%$ as compared to the state score of $M = 48.5\%$, district scores for writing across the disciplines were $M = 34\%$ as compared to the state score of $M = 62.1\%$, finally mathematics scores for the district were $M = 22.1\%$ as compared to the state score of $M = 48.8\%$. District dropout rates were $M = 22.9\%$ as compared to the state dropout rate of $M =$

14.5%, data are represented in Table 1. The school that participated in this study was located in a city that has a population of 123,626 with a growth of 5.2% annually. The town consisted of an 85% non-Caucasian population with 25.2% of residents without a high school diploma. The target population included in the study was a selection of tenth grade students because the administrating teachers only taught tenth grade classes. Tenth grade students were selected for inclusion within the study because the volunteer administrating teachers had only high school sophomores within their classes. The sample was utilized for the purpose of comparing the effects of the researcher developed Self-Efficacy Improvement Intervention on student levels of General Self-Efficacy and Achievement Motivation to the levels of General Self-Efficacy and Achievement Motivation of nonparticipating students.

Table 1

Criteria Qualifying District for Use Within the Study

Criterion	District Average	State Average
High percentage of economically disadvantaged families (Students qualifying for free or reduced lunch)	85%	36.7%
Lower than average scores on state achievement tests (Proficiency on CAPT reading across disciplines)	19.8%	48.5%
Lower than average scores on state achievement tests (Proficiency on CAPT writing across disciplines)	34%	62.1%
Higher than average student dropout rates	22.9%	14.5%

Research sample. The potential population of total enrolled students was 289 with a potential population of 97 tenth grade students. The actual population of tenth graders accessible for the study was 68 students and was reduced to 59 students after data cleansing procedures was

administered; populations are represented in Table 2. A convenience sample of intact groups was used for the study because this is what the school had given us access to and consisted of 59 tenth grade students ($n = 59$) from a school located in New Haven Connecticut. The sample population was derived from four separate classrooms of the same course, the four classes were taught by two teachers that volunteered to participate in the study. One participating teacher facilitated the treatment group while the other facilitated the comparison. All administering teachers were trained in the implementation of the Self-Efficacy Based Improvement Intervention to help with the facilitation of the treatment group if needed. Student demographic data in relation to gender were collected and the treatment program consisted of a total of 33 students, 21 males and 12 females and the comparison group consisted of a total of 26 students, 13 males and 13 females are represented in Table 4. Bilingual, ESL, and special education students' within the treatment classrooms required only minor accommodations related to preferential seating, and printouts of visual materials. Printed materials were provided for the participating teacher to distribute to students' in need of these visual materials during the digital administration of the program. All ESL students' had an advanced level of understanding of the English language that did not prohibit them from understanding.

Table 2

Possible Population and Actual Sample

Group	Teacher Code	Class #	Possible Students	Actual Students
Treatment	1	1	17	15
Treatment	1	2	20	18
Comparison	2	3	15	13
Comparison	2	4	16	13
Total		59	68	59

Table 3

Number of Participating Classrooms and Students by Group

Participating	Experimental Group	Comparison Group	Total
Classrooms	2	2	4
Students	33	26	59

Table 4

Student Demographic Data by Group

Group	Gender	Gender Total	Group Total
Treatment	Male	21	33
	Female	12	
Comparison	Male	13	26
	Female	13	
Total			59

Research design. The research study was quasi experimental and had a pre- and post-test comparison design. Students within the comparison group received no intervention and conducted classes as usual with the participating teacher with the exception of taking the pre and post-test in weeks one and eight. Students within the treatment group participated in the researcher designed Self-Efficacy Based Improvement Intervention (see Table 5).

Table 5

Delineation of the Quasi-Experimental Design

Group	Pretest	Treatment	Posttest
Experimental (SEBII)	O ₁	X	O ₂
Comparison (No Intervention)	O ₁		O ₂

Random assignment of intact groups was used for both convenience and necessity to determine what classrooms would be used as the treatment and comparison groups. The result of the random assignment of intact groups led to one participating teacher having both treatment classrooms and the other participating teacher having both of the comparison classrooms. Two quantitative dependent variables were measured within the study. The first dependent variable was general levels of self-efficacy as measured by the *General Self-Efficacy Scale* (GSE) scale, an instrument with high validity and reliability developed by Schwarzer and Jerusalem (1992). The second dependent variable is achievement motivation and is measured by the Achievement Motivation Inventory (AMI), an instrument with high validity and reliability developed by Schuler et al. (2002).

Instrumentation

The study was conducted over an eight-week time period with a pretest administration of the GSE and AMI employed in week one and a post-test administration in week eight. The pre- and post-test were administered by the researcher and took approximately one hour to complete. Over the next six weeks participants the treatment group received the researcher-created Self-Efficacy Based Improvement Intervention (SEBII). The GSE and AMI were used to measure the dependent variables, respectively.

Achievement Motivation Inventory. The AMI was used to measure the constructs of work related achievement motivation. According to Dweck (1986), “It has been long known that factors other than ability influence whether children seek or avoid challenges and whether they use and develop skills effectively” (p. 1040). The survey consisted of 17 different subscales and 170 items with 10 items measuring each of the subscales. Measurement was conducted using a 7-point Likert scale measuring seventeen different domains responses ranged from “1” does not

apply at all to “7” applies fully. The demographic information for the AMI administration is from ages 16 to 80 years of age. The domains measured by the AMI are compensatory effort, competitiveness, confidence in success, dominance, eagerness to learn, engagement, fearlessness, flexibility, flow, goal setting, independence, internality, persistence, preference for difficult tasks, pride in productivity, self-control, and status orientation. Out of the 17 identified domains and measured the following domains were of particular interest as they appear in literature as relating to self-efficacy: self-assurance, ambition, self-control, and confidence in success (See Appendices A & B). Scores were calculated for each subscale by summing the responses to questions related to that subscale. Total scores for the AMI were derived by summing the total scores for each subscale. The AMI has high reliability for the total score with a Cronbach's alpha of $\alpha = .96$ and ranges from $\alpha = .66$ to $\alpha = .83$ for individual subscales. The content validity was acquired by researchers' work on all major aspects of achievement motivation and their integration within the test. Experts designing the instrument assured that only relevant aspects of achievement motivation had been included. A factor analysis confirmed a good model-fit of the theory tested. Construct validity had been demonstrated through correlations of each of the achievement motivation inventory scales and additional related personality scales from the Big Five inventories. Criterion related validity was shown to predict grade point averages ($r = .22$ for the total score and up to $r = .29$ for single scales (Schuler et al, 2004).

General Self-efficacy Scale. The GSE (Schwarzer & Jerusalem, 1992) was used to measure the general sense of perceived self-efficacy. The purpose was to help predict the ability to cope with daily struggles and assess adaptation after experiencing stressful life events. Perceived Self-Efficacy is “an optimistic self-belief. This is the belief that one can perform a

novel or difficult tasks, or cope with adversity -- in various domains of human functioning” (Schwarzer & Jerusalem, 1992, p. 35). The demographic information for the GSE administration is no less than 16 years of age. The instrument uses 10 items to measure this construct using a 4-point Likert-type scale and takes approximately 4 minutes per subscale used. Responses on the Likert-type scale for the GSE were from “1” Not true At All, “2” Hardly True, “3” Moderately True, to “4” Exactly True. Subscales used for the study were General self-efficacy, collective self-efficacy, proactive attitude, self-regulation, procrastination, environmental worry, proactive coping, avoidance coping, social support, and emotional social support seeking. The summed totals for all subscales used are represented in the data analysis. According to Schwarzer and Jerusalem, “Perceived self-efficacy is an operative construct, i.e., it is related to subsequent behavior and, therefore, is relevant for clinical practice and behavior change” (1992, p. 35). Scores were calculated for each subscale of the GSE by summing the responses for the subscale. Total scores for the GSE were derived by summing the total scores for each subscale (See Appendices C & D).

According to Schwarzer and Jerusalem, “In samples culled from 23 nations the reliability was tested and included a Cronbach Alpha range from $\alpha = .76$ to $\alpha = .90$. The instruments’ criterion-related validity was included through correlation studies and positive coefficients were found with the scales for favorable emotions, dispositional optimism, and work satisfaction. Negative coefficients were correlated with depression, anxiety, stress, and burnout” (1992, p. 1). The instrument did not report on Alpha ranges for specific countries.

Treatment Program Overview

The Self-Efficacy Based Improvement Intervention (SEBII), included the digital delivery of instruction and strategies related to attributing success, scaffolding, selecting goals, coping

skills, sustaining beliefs, and maintaining optimism designed to target specific subscales of the GSE and AMI instruments as supported by the literature. Each weekly treatment intervention module was divided into five phases (see Appendix E and administered from February through March of 2015).

Phase 1 was the initial participant reflection about the topic, this took approximately 5 minutes. During this phase the students were given open-ended question in relation to the module topic and asked to ponder the item. The students were allowed time to write some of these thoughts in their personal journals if they chose to do so, journaling was optional for the students. The students were provided reflection journals for them to write reflective thoughts, the journals were for the edification of each student and were not collected or analyzed by the researcher.

Phase 2 was the direct instruction phase and took approximately 6 to 10 minutes depending upon the module. During the direct instruction phase the students watched an instructional video or scenario that illustrated the concepts, strategies, and tactics for the module topic.

Phase 3 was the modeling phase and during this phase the students watched a video scenario of an individual applying the strategies delivered to them during the previous direct instruction phase. The modeling phase took approximately 3 to 5 minutes to administer depending upon the module content.

Phase 4 was the participant application phase and took approximately 5 minutes to administer. During this phase the students reviewed a short video scenario and were asked prior to the start of the video to imagine themselves within the situation. The students were prompted with questions throughout the video scenario while they watched.

Phase 5 was the discussion section led by the trained classroom teacher to pose questions for student discussion and self-reflection, this took approximately 3 minutes to administer. During this time the students were given the reflection questions as to how they could apply the strategies learned in their own lives. Students had the opportunity to have an open discussion moderated by the classroom teacher regarding the module topic. Students were allowed to provide a written response in their journals if they wanted to do so.

The SEBII module structure and module topics were all supported within the literature review. Module topics were included and selected from the literature as topics that may have an impact on self-efficacy. A jury of independent experts (See table 6) helped in determining whether the module topics adequately represented the domain of interest. The jury of independent experts was selected utilizing the following criteria, members must have a doctoral degree in education, a minimum of 15 years teaching experience, and publications within peer reviewed journals. The classroom teachers acted as proctor/facilitators for the electronic delivery of the SEBII in weeks two through seven, the researcher was present on site to monitor the administration of the pre and post-tests to all participating students within both groups. The researcher was not present to deliver the weekly treatment program (See table 7).

Table 6

Design Qualifications of Jury of Independent Experts

	Degrees Held	Years of Experience
Member #1	B.A. degree in Child Study	25+
	M.S. degree in Special Education	
	Ed.D. degree in Instructional Leadership	
Member #2	BS in Special Education	25+
	MA in Special Education	
	Ed.D. in Educational Psychology	

Table 7

Treatment Program Timeline and Instruction Time

	Treatment		Comparison	
Amount of Time	Class 1	Class 2	Class 3	Class 4
Days of Instruction	6	6	0	0
Weeks of Instruction	6	6	0	0
Minutes of Instruction	35 min day	35 min day	0	0
Days of Testing	2	2	2	2

The intervention was administered by the trained teacher to avoid bias. Professional development that is described in a later section was provided to the teachers to train them how to administer the SEBII treatment program. All administering teachers were provided with a digital proctor manual that detailed and outlined all procedures for the administration process. Upon conclusion of the treatment program student participants were offered the opportunity to receive support services and counseling in conjunction with school guidance and counseling staff. The purpose of the support services was to address any negative concerns the student participants had in regard to being within a school district that has been labeled as an at-risk district.

Self-efficacy Based Improvement Intervention Content. The Self-Efficacy Based Improvement Intervention (SEBII) is a researcher created treatment program designed to increase student levels of general self-efficacy and achievement motivation. The program design was inspired by and modeled after the work of Albert Bandura. The program was designed to include module components that focused on direct experience, vicarious experience, and symbolic sources of information. According to Bandura, “Theoretical formulations emphasizing peripheral mechanisms begin to give way to cognitively oriented theories that explain behavior in terms of central processing of direct, vicarious, and symbolic sources of information” (1977a, p. 192). During the administration of the SEBII program for the treatment group, the comparison group received a monitored administration of the assessment instrumentation (GSE, and AMI) in weeks one and eight and received no intervention in weeks two through seven and classes were conducted in their usual manner.

Treatment Program. The Self-efficacy based improvement intervention (SEBII) is a digitally delivered treatment program designed to enhance students' levels of self-efficacy and achievement motivation. The program was designed to be minimally invasive on class time consisting of approximately one thirty minute module implemented within the classroom once a week for six consecutive weeks. The measurement instruments were administered at the start and end of the program. The instrumentation used were the General Self Efficacy Scale (Schwarzer, 1992) to measure students' general levels of self-efficacy and the Achievement Motivation Inventory (Aronson & Steele, 2005) designed to measure student levels of achievement motivation.

The SEBII is digitally delivered researcher created program designed to enhance constructs that contribute to a perceived sense of self-efficacy. The SEBII program was created

using Adobe Premier and hosted over the Internet and can be located at www.improvementintervention.com. Each of the six SEBII modules consisted of five separate phases and took approximately twenty hours to create each module. The modules are administered by the classroom teacher who navigated the website and lead the entire class through the program as a collective group. Weekly phone calls were made to the administering teachers during the study to ensure the fidelity of implementation procedures were being followed. The program consisted of audio and video materials created and stored on a YouTube channel created specifically to house the treatment program related materials. Audio commentary and voiceover was recorded by the researcher and all videos were open source to prevent any copyright infringement. The initial idea for the program was that module content and topics could be customized to meet the specific needs and address specific issues within individual school districts throughout the country and provide a modular and easily accessible program to increase student self-efficacy.

Students' were introduced to each of the module topics and prompted with an inspirational quote related to the module content. Students' were then presented with three questions related to the module topic in an attempt to gauge initial understanding and stimulate the students' thought in relation to the content. During the first phase of the program students' see and hear a related passage from experiences derived from the lives of prominent, famous, and notable individuals that the students can recognize. These individuals were selected on the basis of student recognition and relatability. The quotes and passages delivered by the individuals was a subtle attempt to illustrate to the students the concept of locus of control. According to Bandura, locus of control relates the idea that the outcome of a situation are related to an individual's beliefs that the results are either a result either of their own actions or chance

(Bandura, 1977b). The first phase of the program also introduced the students' to vocabulary related to the module topic during the initial video.

The second phase of the program, students' watched a video that demonstrated a successful application of the module content with individuals that were dealing with situations that are recognizable and relatable to the students. Bandura identified that vicarious experience is a contributing factor to the development of self-efficacy (Bandura1977b). The students that vicariously witness a situation through the successful actions of another individual that is relatable to them can foster belief in their own ability within a similar situation. This phase was also utilized to demonstrate the concept of adaptive motivational patterns. According to Dweck, “adaptive motivational patterns are those that promote the establishment, maintenance and attainment of personally challenging and personally valued achievement goals” (Dweck, 1986, p. 1040). The third phase of the program the students were prompted prior to the video to think about how they would apply the module topic to the situation they are about to witness. The students were then shown an open ended situation, problem, or issue that is related to the module topic. During this time students were allowed to write down any thoughts or ideas that they have in journal that was provided to them prior to the start of the program. This was conducted in an attempt to reinforce Banduras concept of triadic reciprocal determinism. According to Bandura, triadic reciprocal determinism is the belief that behavior, the environment, and cognition operate as interacting determinants that have a bidirectional influence on each other (Bandura, 1977b). If the students' see a peer or other relatable individual in a recognizable situation that fosters belief in their own ability within a similar situation then the cognitive aspect can have an influence on their actions within the environment. *Achievement Behavior* is “behavior directed at developing or demonstrating high rather than low ability” (Nicholls, 1984, p. 328).

Phase four of was a class discussion related to what they witnessed in the video, students' were prompted to share how they would handle the situation or addressed the issue in the video. This discussion was facilitated by the classroom teacher and was driven by the initial questions posed to the class prior to phase one of the module. This open discussion was to help students' see that they are not isolated and there are other individuals amongst their peers that are dealing with similar situations. Phase five was a brief final video that designed to relate back to both the initial inspirational quote and the words of wisdom presented by the notable individuals during phase one of the program. Phase five was created to be a summation of the concepts presented, application of the procedure, and inspirational influence designed to encourage students' to apply the module content to situations within their own lives. Phase five was an attempt to increase the personal cognitive process in regard to achievement behavior. According to Nicholls, achievement behavior is "behavior directed at developing or demonstrating high rather than low ability" (Nicholls, 1984, p. 328).

Teacher Training. Professional development was provided to the teachers that volunteered to help. Training was provided to the treatment teacher that administered the program to the treatment group and to the comparison group teacher not implementing the treatment program. The comparison group teacher was trained in the event that the treatment group teacher required on-site assistance or was absent. They were trained on how to navigate the SEBII website and identify the individual weekly modules and when they were to be conducted. Both teachers were instructed and received a full demonstration for administering a program module from beginning to end. The treatment group administering teacher was provided with a proctor manual that detailed and outlined all procedures for the administration process. The professional development was to familiarize them with the administration

procedures of the program and how to navigate and utilize the SEBII treatment website. The training included three individual meeting sessions over three consecutive weeks; each training session was over one hour in length. The initial training session consisted of a modeling phase where the researcher administered one of the treatment program modules to the teachers helping with the study. The second training consisted of the teachers facilitating teacher acclimating themselves with the Self-Efficacy Based Intervention website as well as being instructed on facilitation procedures and where to locate emergency researcher contact on the site if needed. The final session consisted of the facilitating teachers presenting a treatment module from beginning to end to determine if all administration procedures were being completed as outlined. In addition to the teacher training, the SEBII website had an instructor resource page outlining all facilitation and communication procedures. All training was conducted in January of 2015 immediately prior to the start of the program.

Post Intervention. Upon conclusion of the treatment program student participants in the comparison group were offered the opportunity to receive the SEBII treatment program and all participating students were offered support services and counseling in conjunction with school guidance and counseling staff. The purpose of the support services was to address any negative concerns the student participants may have had in regard to being within a school district that has been labeled as an at-risk district. None of the participating students in the program opted for these services.

Data Collection Procedures and Timeline.

1. December 2014: the study was approved by full review and an IRB protocol number was assigned.

2. December 2014: all consent forms were mailed out to the participating district and school.
3. January 2015: consent forms were hand delivered to administrating teachers and teacher training was scheduled to take place within the next month.
4. January 2015: four hours of instruction was delivered to the administrating teachers on how to use the treatment program website and methodology for implementing the program.
5. February 2015: the eight-week study began. In week one the participating students were administered the pretest consisting of the GSE and the AMI.
6. February – March 2015: the participating students in the treatment group received the six-week Self-Efficacy Based Improvement Intervention (SEBII) treatment program. Weekly telephone contact with administrating teachers was conducted to ensure the fidelity of implementation procedures.
7. March 2015: the eight-week study concluded. In week eight the participating students were administered the posttest consisting of the GSE and the AMI.
8. April 2015: participants were debriefed and students participating in the comparison group were offered the opportunity to receive the SEBII treatment program. Upon conclusion of the study none of the students within the control group decided to opt into the SEBII treatment program.

Description and Justification of Data Analysis. There was a need for data cleaning procedures to be employed prior to analysis of the data to identify missing values, outliers, patterns within the test answers, and potential statistical assumption violations. The data cleaning procedures are explained in full detail within Chapter 4.

Analysis of research question one. All data collected for the study were quantitative and generated by the instrumentation used within the study. The statistical methodology employed for analysis of Research Question One was a two-way ANOVA. The two-way ANOVA determined if the independent variable program had a significant main effect on the dependent variable General Self Efficacy. The two-way ANOVA also determined if the independent variable gender had a significant main effect on the dependent variable General Self Efficacy. It was also conducted to determine if there was a significant interaction between the independent variables of program and gender in relation to the dependent variable General Self Efficacy. Significance levels for all statistical procedures were set at a value of $p < .05$.

Analysis of research question two. The statistical methodology employed for analysis of Research Question Two was also a two-way ANOVA. The two-way ANOVA also determined if the independent variable program had a significant main effect on the dependent variable Achievement Motivation. The two-way ANOVA also determined if the independent variable gender had a significant main effect on the dependent variable Achievement Motivation. It was also conducted to determine if there was a significant interaction between the independent variables program and gender in relation to the dependent variable Achievement Motivation. According to Meyers, Gamst, and Guarino, “A main effect involves comparing the means of various levels of an independent variable each independent variable in a factorial design is associated with its own main effect. The ANOVA that we perform allows us to evaluate the significance of each of them” (2006, p. 288). Meyers et al. (2006) also stated, “In addition to the two main effects, a two-way design allows us to evaluate the interaction of the two independent variables” (p. 150). A between subject design was chosen because it allowed the independent

variables to be compared to each other. Significance levels for all statistical procedures were set to value of $p < .05$.

Limitations of the Study

In an attempt to eliminate bias and appropriately measure the impact of the treatment program on the dependent variables measures were taken to control for possible threats to the internal validity of the study. The researcher used random assignment of intact groups for assignment selection. The treatment program was facilitated by volunteer teacher participants who received four hours of implementation training on how to properly use the online treatment program and facilitate each stage in the program.

The researcher was not able to control for the assignment of individual students to either the comparison group or treatment group, random assignment of intact groups was used in the study. Teacher one who administered the comparison group had a total of 33 students divided into two classrooms; one class had 15 students and the other with 18 students. Teacher two who monitored the control group had a total of 26 students' divided into two classrooms, one classroom with 15 students and the other with 11 students'. The researcher was also unable to control for different class sizes or an equal representation of males and females within both the treatment and comparison groups, also resulting from the random assignment of intact groups (See Tables 8 and 9). Testing fatigue was experienced by students during both the pre and post-test administration due to the length of the survey could also be a limitation. Another potential limitation to the study was a threat to population validity in terms of the findings being generalizable across populations. The reason for this is that the students participating in the study were drawn from a sample consisting of only tenth grade students. The limitations to the study are addressed in greater detail in Chapter 5.

Table 8

Between-Subjects Factors

	Code	Value Label	<i>n</i>
Gender	0	Male	34
	1	Female	25
Group	1	Treatment	33
	2	Comparison	26

Table 9

Gender by Group

Group	Gender	Total
Treatment Group (2 Classrooms)		
Male	21	
Female	12	33
Comparison Group (2 Classrooms)		
Male	13	
Female	13	26
Total	59	59

Table 10

Gender by Class

Group	Males	Females	Total
<u>Treatment</u>			
Class 1	11	7	18
Class 2	10	5	15
<u>Comparison</u>			
Class3	8	7	15
Class 4	5	6	11
Total	34	25	59

Statement of Ethics and Confidentiality

The researcher adhered to strict ethical standards while conducting research as outlined by the Western Connecticut State University (WCSU) Institutional Review Board (IRB). All methods employed were submitted to the Institutional Review Board for approval and permission was granted prior to any research being conducted. Upon approval by the IRB written and informed consent were obtained by the researcher from the participating district,

school, administration, administering teachers, and participants' legal guardians. Written assent also was gathered from the participants included in the study. To ensure confidentiality no names were included in the reported study. Individual GSE and AMI scores remained confidential and were only accessible by the researcher and participating faculty at Western Connecticut State University's Doctor of Education in Instructional Leadership Program that cooperated in review of the data analysis.

CHAPTER 4: ANALYSIS OF THE DATA AND FINDINGS

This chapter includes the research questions and hypotheses that guided this study and reviews the statistical procedures conducted to analyze the data. This review includes data cleaning measures employed, statistical analyses used, and the results of all analytic procedures.

The first research question examined student levels of General Self Efficacy in relation to gender and participation. Research Question One was analyzed using a Two Way Analysis of Variance. This procedure was used to identify if there was a significant main effect on the dependent variable resulting from the independent variables included. This also identified the presence of an interaction effect between independent variables on the dependent variable. Tests of Between-Subjects Effects were conducted for each dependent variable to determine if the main effects or interactions were statistically significant. An ANCOVA also was run to determine if the GSE pretest used as a covariate had any impact on the level of significance.

The second research question examined the students' levels of Achievement Motivation also in relation to gender and participation. Research Question Two also was analyzed using a Two Way Analysis of Variance. Tests of Between-Subjects Effects were conducted for each dependent variable to determine if the main effects or interactions were statistically significant. An ANCOVA was run to determine that if the AMI pretest used as a covariate had any impact on the level of significance.

Research Questions and Hypothesis

Research Questions

Research Question One: Is there a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' General Self-Efficacy?

- a. Is there a significant main effect in General Self-Efficacy for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program?
- b. Is there a significant main effect in General Self-Efficacy between male and female students?
- c. Is there a significant interaction for group membership and gender with respect to General Self-Efficacy?

Non-directional Hypothesis: There will be a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' General Self-Efficacy

- a. There will be a significant main effect in General Self-Efficacy for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program.
- b. There will be a significant main effect in General Self-Efficacy between male and female students.
- c. There will be a significant interaction for group membership and gender with respect to General Self-Efficacy.

Research Question Two: Is there a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' Achievement Motivation?

- a. Is there a significant main effect in Achievement Motivation for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program?

- b. Is there a significant main effect in Achievement Motivation between male and female students?
- c. Is there a significant interaction for group membership and gender with respect to Achievement Motivation?

Non-directional Hypothesis: There will be a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and gender with respect to students' Achievement Motivation.

- a. There will be a significant main effect in Achievement Motivation for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program.
- b. There will be a significant main effect in Achievement Motivation between male and female students.
- c. There will be a significant interaction for group membership and gender with respect to Achievement Motivation.

Data Cleansing and Coding

The study began with 68 potential participants and 59 actual participants. Of the 59 actual participants 33 were in the treatment group and 26 were in the comparison group. Prior to the data analysis the student pre- and post-tests were encoded with numerals to protect student confidentiality for the students participating within the study. The data were screened utilizing the results generated from the administration of the instruments. The screening was conducted to identify missing values or patterns within the data, missing pre- or post-test data resulting from student absence or nonparticipation, and for outliers.

During the pre and post-test pairing five students were identified and removed from the study as having completed only the pre- or post-test. Four additional students were identified and removed as not having completed the instrument in its entirety or having continually repeating patterns within the self-report score sheets. This left a total sample 59 students included within the study, 33 students were within the treatment group and 26 were within the comparison group for the statistical analysis of the data. These items were included as having been missing at random, “this suggests that a variable’s missing values are said to be random after controlling for other variables, the variable cannot predict the distribution of the missing data” (Meyers, 2002. p. 57) and were, therefore, eliminated from the study dropping the number of participants to 59 in total.

The resulting breakdown of the 59 participants comprised of 34 males and 25 females. Through random selection of intact groups 33 participants were in the treatment group with the remaining 26 participants were in the comparison group. Through the random selection of intact groups 21 males and 12 females were assigned to the treatment group leaving the remaining 13 males and 13 females participating within the comparison group. Due to the fact that random assignment of intact groups was utilized for the study there is a difference in the gender representation for one of the treatment groups having more males than females included (Refer Back to Tables 8 & 9).

Equality of groups prior to treatment. The study included relatively small cell sizes within the sample population of the study. The small cell size can impact both the robustness and the power of the study. Robustness is not an issue for this study as both the skewness and kurtosis (See Table 11) are within acceptable parameters of plus or minus one and the *t*-tests included equality of groups prior to treatment. The concern lies with the issue of power, the

probability of obtaining significance is partly a function of the amount of the data that are used within the study. The small sample size will result in a greater standard of error. According to Meyers, Gamst, and Guarino (2006), “generally we can say that researchers achieve greater power with increases in their sample size. This is the case because larger sample sizes are associated with lower standard errors of the mean and narrower confidence intervals” (Meyers et al., p. 41). Results for homogeneity of variance was derived from Levene’s Test of Equality of Error Variance, each test statistic was not significant suggesting homogeneity (See Table 11). The independence assumption can be questioned because the study was a quasi-experimental study and the researcher randomly assigned intact groups. Random assignment of intact groups can lead to dependence of the participants but this was addressed by the researcher instead of the participating teacher administering the pre and post measures. The normality assumption is addressed the skewness and kurtosis for the pre- and post-test results for all instrumentation used within the study fell within an acceptable range of plus or minus one (see Table 10).

Table 11

Treatment Group Pre-test Skewness and Kurtosis by Instrument

Measures of Normality	AMI Total Pre	GSE Total Pre
Skewness	-.257	-.235
Kurtosis	-.325	-.708
<i>t</i> -test	-.688	-.889

Table 12

Levene's Test of Equality of Error Variance

Dependent Variable	<i>F</i>	<i>df</i> 1	<i>df</i> 2	Sig.
AMI Total Pre	1.366	3	55	.263
AMI Total Post	2.474	3	55	.071
GSE Total Pre	.8160	3	55	.491
GSE Total Post	1.160	3	55	.333

Note. No significance indicates there is homogeneity of variance.

After the extraction of missing data and outliers the remaining data presented itself in a normal distribution for results of all instruments administered. The skewness and kurtosis for the pre- and post-test results for all instrumentation used within the study fell within an acceptable range of plus or minus one. The cleansed pre-test data were then analyzed using the statistical procedures of a two-way ANOVA for each of the research questions. Two separate independent samples *t*-test were conducted to compare if there was a mean difference for each of the univariate dependent variables in order to identify if there was difference in the performance of the post-test mean scores under the applied test conditions. Meyers, Gamst, and Guarino state, “any observed mean differences must be evaluated in the context of how much measurement error is present in the research” (Meyers et al, pg. 280). Two separate ANOVAs were conducted to compares the mean differences between the dependent variables once the independent variables had been separated into the factors of group and gender that are used within the context of the study. The purpose was to identify if either of the factors had a significant main effect on the dependent variable and to determine whether there are any statistically significant differences

between the means, it would also illustrate if there was a significant interaction between the factors and if one factor has an effect on the other factor.

The analysis of the pre-test data included equality of groups prior to the treatment program being implemented. The equality of groups prior to treatment will allow the researcher to identify if the factors included within the study had any impact on the dependent variables. The equality of groups included during the analysis of the pre-test data is critical to help reduce the chance of a Type I error and falsely reject a null hypothesis if it is true.

Results for Research Question One

Research Question One was analyzed to determine if there was a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and students' General Self-Efficacy with respect to gender using a two-way ANOVA. It illustrated if there was a significant main effect in General Self-Efficacy for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program. It also illustrated if there was a significant main effect for General Self-Efficacy between male and female students, as well as, if there was a significant interaction between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and students' General Self-Efficacy with respect to their gender.

Table 13

Descriptive Statistics for Research Question One

		GSE Total Pre	GSE Total Post
<i>N</i>	Valid	59	59
	Missing	0	0
Mean Total for All Subscales		256.71	262.95
Std. Deviation		28.70	27.66
Skewness		-.235	.132
Std. Error of Skewness		.311	.311
Kurtosis		-.708	-.308
Std. Error of Kurtosis		.631	.613

Results for Research Question One showed that for Levene's test of equality of variance for the dependent variable GSE Total Post-test included no statistical significance ($F(3, 55) = 1.160, p > .333$) indicating homogeneity of variance among the dependent variable across groups and this allowed the researcher to proceed with the data analysis (see Table 14).

Table 14

GSE Total Pre-test Values – Descriptive Statistics (ANOVA)

Gender	<i>M</i>	<i>Std. Deviation</i>	<i>n</i>
Male			
Treatment	251.33	30.381	21
Comparison	262.15	32.761	13
Total	255.47	31.276	34
Female			
Treatment	258.00	21.604	12
Comparison	258.77	29.238	13
Total	258.40	25.328	25
Total			
Treatment	253.76	27.348	33
Comparison	260.46	30.471	26
Total	256.71	28.708	59

Table 15

GSE Total Post-test Values - Levene's Test of Equality of Variance (ANOVA)

<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
1.160	3	55	.333

Note. Design: Intercept + Gender + Group + Gender * Group

Results for Research Question One included that there was significant main effect in regard to students' General Self-Efficacy with respect to gender, $F(3, 55) = 7.668, p = .008, \eta^2 = .122$), the partial eta squared accounted for 12.2% of the variance accounted for by the variable gender. The mean totals in the comparison group were higher for both males ($M = 272.24$) and females ($M = 253.33$) as compared to the control group males ($M = 270.00$) and females ($M = 249.77$). See Table 16. The results also included that there was no statistical significant main effect on General Self-Efficacy for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program, $F(3, 55) = .169, p = .683, \eta^2 = .003$). The results also included that there was no significant interaction between gender and program, $F(3, 55) = .009, p = .926, \eta^2 = .000$) (see Table 17).

Table 16

<i>Dependent Variable – GSE Total Post-test (ANOVA)</i>			
Gender	<i>M</i>	Std. Deviation	<i>n</i>
Male			
Treatment	272.24	31.82	21
Control	270.00	26.53	13
Total	271.38	29.51	34
Female			
Treatment	253.33	22.77	12
Control	249.77	18.61	13
Total	251.48	20.35	25
Total			
Treatment	265.36	29.94	33
Control	259.88	24.71	26
Total	262.95	27.66	59

Table 17

GSE Total Post-test Values - Test of Between-Subjects Effects(ANOVA)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5826.064	3	1942.021	2.769	.050	.131
Intercept	3836877.514	1	3836877.514	5470.627	.000	.990
Gender	5377.801	1	5377.801	7.668	.008	.122
Group	118.208	1	118.208	.169	.683	.003
Gender * Group	6.174	1	6.174	.009	.926	.000
Error	38574.784	55	701.360			
Total	4123794.000	59				
Corrected Total	44400.847	58				

Note. R Squared = .131 (Adjusted R Squared = .084)

Analysis of the pretest results found within the test of between subject effects for the dependent variable general self-efficacy total included that there was no statistical significance for either of the independent variable gender $F(3, 55) = .045, p = .834, \eta^2 = .001$). There was also no significance for the independent variable group $F(3, 55) = .555, p = .459, \eta^2 = .010$). Results also included that there was no significant interaction between gender and group $F(3, 55) = .417, p = .521, \eta^2 = .008$) for General Self Efficacy Total Pretest (see Table 18).

Table 18

GSE Total Pre-test Values - Test of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial
						Eta Squared
Corrected Model	1067.435	3	355.812	.419	.740	.022
Intercept	3726944.282	1	3726944.282	4386.267	.000	.988
Gender	37.823	1	37.823	.045	.834	.001
Group	471.639	1	471.639	.555	.495	.010
Gender * Group	354.736	1	354.736	.417	.521	.008
Error	46732.667	55	849.685			
Total	3935958.000	59				
Corrected Total	47800.102	58				

Note. R Squared = .131 (Adjusted R Squared = .084)

The GSE pretest results between males and females also indicated no significant differences between male and female for either the GSE pretest results between treatment ($M = 253.76$, $SE = 4.761$) and comparison ($M = 260.46$, $SE = 5.976$). See Table 19.

Table 19

GSE Total Pre-test Values - Descriptive Statistics (ANOVA)

Gender	Mean Total for All Subscales	Std. Deviation	<i>N</i>
Male			
Treatment	251.33	30.381	21
Comparison	262.15	32.761	13
Total	255.47	31.276	34
Female			
Treatment	258.00	21.604	12
Comparison	258.77	29.238	13
Total	258.40	25.328	25
Total			
Treatment	253.76	27.348	33
Comparison	260.46	30.471	26
Total	256.71	28.708	59

Levene's test of equality of variance for the dependent variable GSE Total Pre-test included no statistical significance ($F(3, 55) = .816, p > .491$) indicating homogeneity of variance among the dependent variable across groups and this allowed the researcher to proceed with the data analysis (see Table 20).

Table 20

GSE Total Pre-test Values - Levene's Test of Equality of Variance (ANOVA)

<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
.816	3	55	.491

Note. Design: Intercept + Gender + Group + Gender * Group

Results for Research Question Two

Research Question Two was analyzed to determine if there was a significant difference between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and students Achievement Motivation with respect to gender using a two-way ANOVA. It illustrated if there was a significant main effect in Achievement Motivation for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program. It also illustrated if there a significant main effect for Achievement Motivation between male and female students, as well as, if a significant interaction between program (Self-Efficacy Based Improvement Intervention and Non-Participation) and students Achievement Motivation with respect to their gender.

Table 21

Descriptive Statistics for Research Question Two

Headings		AMI Total Pre	AMI Total Post
<i>N</i>	Valid	59	59
	Missing	0	0
Mean Total for All Subscales		758.31	745.34
Std. Deviation		88.00	74.42
Skewness		.257	-.035
Std. Error of Skewness		.311	.311
Kurtosis		.325	-.192
Std. Error of Kurtosis		.631	.631

Levene's test of equality of variance for the dependent variable AMI Total Post-test included no statistical significance ($F(3, 55) = 2.474, p > .071$) indicating homogeneity of variance among the dependent variable across groups and this allowed the researcher to proceed with the data analysis (see Table 22).

Table 22

AMI Total Post-test Values - Levene's Test of Equality of Variance

<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
2.474	3	55	.071

Results for Research Question Two included that there was no statistical significant main effect on Achievement Motivation for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program, ($F(3, 55) = 1.262, p = .266, \eta^2 = .022$). The results also illustrated that there was no significant main effect in Achievement Motivation between male and female students, $F(3, 55) = .107, p = .745, \eta^2 = .022$) There was also no statistical significance in regard to the interaction between program and students' Achievement Motivation with respect to gender ($F(3, 55) = 2.390, p = .128, \eta^2 = .042$. See Table 24.

Table 23

AMI Total Pre-test Values - Descriptive Statistics (ANOVA)

Gender	<i>M</i>	<i>Std. Deviation</i>	<i>n</i>
Male			
Treatment	736.29	101.149	21
Comparison	752.46	70.063	13
Total	742.47	89.718	34
Female			
Treatment	777.50	68.950	12
Comparison	782.00	96.205	13
Total	779.84	82.534	25
Total			
Treatment	751.27	91.837	33
Comparison	767.23	83.819	26
Total	758.31	88.008	59

Table 24

AMI Total Post-test Values - Test of Between-Subjects Effects(ANOVA)

Source	Type III Sum	df	Mean Square	F	Sig.	Partial Eta
	of Squares					Squared
Corrected Model	17108.304	3	5702.768	1.125	.347	.058
Intercept	31331094.490	1	31331094.49	6181.234	.000	.991
Gender	542.461	1	542.461	.107	.745	.002
Group	6397.806	1	6397.806	1.262	.266	.022
Gender * Group	12114.024	1	12114.024	2.390	.128	.042
Error	278780.917	55	5068.744			
Total	33072171.000	59				
Corrected Total	295889.220	58				

Note. R Squared = .058 (Adjusted R Squared = .006)

An ANOVA was conducted for each of the dependent variables pretest results, the dependent variables were AMI Total and GSE Total. This procedure was conducted to identify if significance was present for the independent variables gender, group, and the interaction between the independent variables. Analysis of the pretest results found within the test of between subject effects for the dependent variable *Achievement Motivation Inventory* total included that there was no statistical significance for either of the independent variable gender $F(3, 55) = 2.265, p = .138, \eta^2 = .040$). There was also no significance for the independent variable group $F(3, 55) = .193, p = .662, \eta^2 = .004$). Results also included that there was no

significant interaction between gender and group $F(3, 55) = .062, p = .805, \eta^2 = .001$) for *Achievement Motivation Inventory* Total Pretest (see Table 25).

Table 25

AMI Total Pre-test Values - Test of Between-Subjects Effects

Source	Type III Sum		Mean Square	<i>F</i>	Sig.	Partial Eta Squared
	of Squares	<i>df</i>				
Corrected Model	22345.992	3	7448.664	.960	.418	.050
Intercept	32625909.820	1	32625909.820	4203.498	.000	.987
Gender	17577.166	1	17577.166	2.265	.138	.040
Group	1501.025	1	1501.025	.193	.662	.004
Gender * Group	478.671	1	478.671	.062	.805	.001
Error	426888.516	55	7761.609			
Total	34375804.000	59				
Corrected Total	449234.508	58				

Note. R Squared = .131 (Adjusted R Squared = .084)

Table 26

AMI Total Pre-test Values - Descriptive Statistics (ANOVA)

Gender	<i>M</i>	<i>Std. Deviation</i>	<i>n</i>
Male			
Treatment	736.29	101.149	21
Comparison	752.46	70.063	13
Total	742.47	89.718	34
Female			
Treatment	777.50	68.950	12
Comparison	782.00	96.205	13
Total	779.84	82.534	25
Total			
Treatment	751.27	91.837	33
Comparison	767.23	83.819	26
Total	758.31	88.008	59

Table 27

<i>Dependent Variable - AMI Total Post-test (ANOVA)</i>			
Gender	Mean	Std. Deviation.	<i>n</i>
Male	739.67	81.69	21
Treatment			
Control	747.69	49.39	13
Total	742.74	70.34	34
Female	775.25	88.93	12
Treatment			
Control	724.54	49.17	13
Total	748.88	74.18	25
Total	752.61	84.80	33
Treatment			
Control	736.12	49.71	26
Total	745.34	71.42	59

Levene's test of equality of variance for the dependent variable AMI Total Pre-test included no statistical significance ($F(3, 55) = 1.366, p > .263$) indicating homogeneity of variance among the dependent variable across groups and this allowed the researcher to proceed with the data analysis (see Table 28).

Table 28

AMI Total Pre-test Values - Levene's Test of Equality of Variance (ANOVA)

<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
1.366	3	55	.263

Note. Design: Intercept + Gender + Group + Gender * Group

Conclusion

Although the results of the Two Way Analysis of Variance indicated no statistically significant areas with the exception of gender there are some results that can be concluded. The first conclusion is that the onset of the treatment program does no harm to the students participating within the program and can be included in the classroom teacher's toolbox while additional research is conducted relating to the treatment program. This can be surmised as initial data analysis suggests that there is a positive move towards the program generating statistically significant results. Second, with the inclusion of the pre-test as the covariate even there were still no significant results generated other than gender, it did move the significance closer towards statistically significant results. This supported the fact that the program does no harm and suggests that with some program modifications it could be a useful resource to increase student levels of general self-efficacy and achievement motivation (See tables 24 - 29).

Table 29

GSE Post-test Comparison Significance Levels (ANOVA v. ANCOVA)

Independent Variable	ANOVA	ANCOVA
Gender	.008	.002
Group	.683	.404
Group*Gender	.926	.820

Table 30

AMI Post-test Comparison Significance Levels (ANOVA v. ANCOVA)

Independent Variable	ANOVA	ANCOVA
Gender	.745	.529
Group	.266	.103
Group*Gender	.128	.096

Table 31

AMI Mean Comparison

Gender	<i>Pre-test</i>	<i>Post-test</i>	<i>n</i>
Male			
Treatment	736.29	739.67	21
Comparison	752.46	747.69	13
Total	742.47	742.74	34
Female			
Treatment	777.50	775.25	12
Comparison	782.00	724.54	13
Total	779.84	748.88	25
Total			
Treatment	751.27	752.61	33
Comparison	767.23	736.12	26
Total	758.31	745.34	59

Table 32

GSE Mean Comparison

Gender	Pre-test	Post-test	<i>n</i>
Male			
Treatment	251.33	272.24	21
Comparison	262.15	270.00	13
Total	255.47	271.38	34
Female			
Treatment	258.00	253.33	12
Comparison	258.77	249.77	13
Total	258.40	251.48	25
Total			
Treatment	253.76	265.36	33
Comparison	260.46	259.88	26
Total	256.71	262.95	59

Table 33

AMI Post-test Adjusted Means

Group	<i>M</i>	<i>Std. Error</i>	95% Confidence Interval	
			Lower Bound	Upper Bound
Treatment	758.112	10.655	736.750	779.474
Control	731.982	11.576	708.774	755.190

Note. Covariates appearing in model are evaluated at the following: AMI total pre = 758.31.

Table 34

GSE Post-test Adjusted Means

Group	<i>M</i>	<i>Std. Error</i>	95% Confidence Interval	
			Lower Bound	Upper Bound
Treatment	271.106	4.180	262.725	279.486
Control	250.848	4.745	241.334	260.361

Note. Covariates appearing in model are evaluated at the following: GSE total pre = 256.71.

CHAPTER 5: SUMMARY AND CONCLUSIONS

The purpose of the study was to implement a researcher developed treatment program and identify if the program had an impact on student levels of self-efficacy and increase a student's levels of achievement motivation of secondary education students within a district classified as being at-risk. The program was designed to facilitate students in generating a more accurate belief in regard to their ability within varying situations. The goal of the program was to help teach students strategies and tactics to increase sources of efficacy expectations and impact perceived levels of achievement motivation. Research has shown that more accurate beliefs in ability have a positive impact on the challenges that students will attempt to achieve. According to Dweck (1986), "It has been long known that factors other than ability influence whether children seek or avoid challenges and whether they use and develop skills effectively" (p. 1040).

Two separate instruments were used to gather data before and after the implementation of the program. The instruments used were the *General Self-Efficacy Scale* (Schuler et al., 2001) and *Achievement Motivation Inventory* (Aronson & Steele, 2005) these instruments measured the dependent variables for this study. The methodology employed to analyze the data were the same for each of the research questions with respect to each of the dependent variables. The two-way ANOVA was used to determine if there was a significant difference between the independent variables in relation to the dependent variable. Levene's test of equality of variance was also used, indicating homogeneity of variance among the dependent variable across groups allowing us to proceed with the data analysis. Significance levels for all statistical procedures were set to a value of $p < .05$. The study was conducted over an 8 week time period where the researcher had access to the participant population. It is possible that data gathered at a later

point in time may illustrate some change and yield different results considering that learning takes time.

Review of Findings

Research Question One

The results for Research Question One included that there was no statistical significance in regard to the difference between program or gender with respect to students' General Self-Efficacy. The results also included that there was no statistical significant main effect on General Self-Efficacy for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program.

The results did identify a significant main effect in General Self-Efficacy between male and female students and accounted for 12.2% of the variance accounted for by the variable gender. Even though there was significance found, examining the mean scores included that the males in both the treatment and comparison groups showed an increase between the pre and post-test scores (See Table 35). This suggested that there could have been some unknown and unaccounted variable that generated the increase in the GSE total scores for males. After following up with the administering teachers' to inquire if there was anything of note that could have impacted the performance of the male students' neither participating teacher cited any contributing factor within the school. The assumption for the ANOVA procedure results is that the program did not do the participants any harm and did have some small non-statistically significant impact on student levels of general self-efficacy. There was also no significant interaction between independent variables with respect to General Self-Efficacy.

Table 35

GSE Mean Comparison

Gender	Pre-test	Post-test	<i>n</i>
Male			
Treatment	251.33	272.24	21
Comparison	262.15	270.00	13
Total	255.47	271.38	34
Female			
Treatment	258.00	253.33	12
Comparison	258.77	249.77	13
Total	258.40	251.48	25
Total			
Treatment	253.76	265.36	33
Comparison	260.46	259.88	26
Total	256.71	262.95	59

Research Question Two

The results for Research Question One included that there was no statistical significance in regard to the difference between program or gender with respect to students' Achievement Motivation. The results included that there was no statistical significant main effect on Achievement Motivation for students who have participated in a Self-Efficacy Based Improvement Intervention as compared to those who have not participated in this type of program. There was also no significant main effect in Achievement Motivation between male

and female students. There was also no significant interaction between independent variables with respect to Achievement Motivation. The assumption is that the program did not do the participants any harm and did have some small non-statistically significant impact on student levels of achievement motivation.

The results generated from the data analysis procedures illustrated that the researcher designed SEBII treatment program did not generate any significant results. It is therefore recommended that the treatment program be reexamined and reviewed to identify areas of improvement and changes to the program be made in order to increase effectiveness.

Table 36

AMI Mean Comparison

Gender	Pre-test	Post-test	<i>n</i>
Male	736.29	739.67	21
Treatment			
Comparison	752.46	747.69	13
Total	742.47	742.74	34
Female			
Treatment	777.50	775.25	12
Comparison	782.00	724.54	13
Total	779.84	748.88	25
Total			
Treatment	751.27	752.61	33
Comparison	767.23	736.12	26
Total	758.31	745.34	59

Table 37

Dependent Variable –Post-test mean results comparison (ANOVA and ANCOVA)

Gender	<i>M</i>	Std. Deviation.	<i>n</i>
Male			
Treatment	272.24	31.82	21
Control	270.00	26.53	13
Total	271.38	29.51	34
Female			
Treatment	253.33	22.77	12
Control	249.77	18.61	13
Total	251.48	20.35	25
Total			
Treatment	265.36	29.94	33
Control	259.88	24.71	26
Total	262.95	27.66	59

Relationship to Review of the Literature

According to Bandura, people will develop domain specific beliefs about their own abilities that guide behavior by helping them to determine what they attempt to achieve and how much effort they will exert towards achieving the established goal (Bandura, 1977b). Bandura identified four principle sources of information from which individuals base their self-efficacy; these sources are performance attainment, vicarious experiences, verbal persuasion, and emotional arousal states. Each of these principle sources of information was included when designing the delivery of the treatment program. Although the results did not demonstrate a significant difference between the treatment and comparison groups the results suggest that the content of the program material was sound and in alignment with the primary sources of information as explained by Bandura. This evidence is supported by existing research in relating to each of the components of performance attainment, vicarious experiences, verbal persuasion, and emotional arousal states that were included within the study.

Dweck suggested that the idea that the mindset is malleable and subject to change (Dweck, 1986). Dweck determined that the choice of the goals the students have in the classroom could impact the cognitive process that they use for completion of the goal. These cognitive processes were either adaptive or maladaptive. Dweck (1986) concluded, “Adaptive motivational patterns are those that promote the establishment, maintenance and attainment of personally challenging and personally valued achievement goals” (Dweck, 1986, p. 1040). She also stated, “Maladaptive patterns are associated with a failure to establish reasonable, valued goals, to maintain effective striving toward those goals” (1986, p. 1040). Each of the module topics used within the study supported forming adaptive motivational patterns as suggested by

Dweck. Each of the topics also were included through the literature review as having an impact on increasing an individual's level of perceived self-efficacy.

Threats Related to the Study

The internal factors that posed a threat to the external validity of the study were history, testing, and biases. Campbell and Stanley define History as “the specific events occurring between the first and second measurement in addition to the experimental variable (Campbell & Stanley, 1963, p. 5). This posed a threat to the study because with the exception of the pre and post-test administration that was facilitated by the researcher all modules for the next six weeks were facilitated by the participating teacher. In an attempt to control for this threat extensive teacher training was administered for both the facilitating teacher of the treatment group and the teacher for the comparison group. Training was provided to both for the teachers in the event that a substitute for the treatment group teacher was required. Testing was also a potential threat and is defined by Campbell and Stanley (1963) as, “the effects of taking a test upon the scores of a second testing” (Campbell & Stanley, p. 5). This was identified as a potential threat after the administration of the pre-test instrument. The researcher was not concerned with the time between testing as there were six weeks of program module conducted with the treatment group between the instrument administrations. There was a noticeable amount of test-fatigue experienced by the students upon completion of the pre-test administration. The researcher was concerned about the impact of the fatigue upon the results but conducted administration of the same instrument during the post-test. The testing-fatigue did lead to some participant responses being eliminated during the data cleansing process due to systematic, patterned, or incomplete responses on the score sheets. Campbell and Stanley warn about, “Biases resulting in differential selection of respondents for the comparison groups” (Campbell & Stanley, 1963, p. 5). There

was limited control over this potential threat as the treatment and comparison groups were being administered within the same school building. There is some solace as the treatment program and comparison groups were administered by two different administering teachers and were located on opposite sides of the building from each other

The external factors that posed a threat to the external validity of the study were interaction effects of selection bias and the reactive effects of experimental arrangements. The interaction effects of selection biases and the experimental variable” (Campbell & Stanley, 1963, p. 6). This was a potential threat because there was a random assignment of intact groups to both the treatment and comparison groups. Due to the assignment of intact groups this could have impacted the experimental variable, whereas self-efficacy or achievement motivation could have potentially been increased as student participants were a preexisting collective and could have relied one another for support. The researcher attempted to control for this by being on site and personally administering the pre and post-test instrumentation. Reactive effects of experimental arrangements, which would preclude generalization about the effect of the experimental variable upon persons being exposed to it in non-experimental settings” (Campbell & Stanley, 1963, p. 6).

Limitations of the Study

There were some additional limitations to the study that the researcher was not able to control for such as the assignment of individual students to either the comparison group or treatment group. Random assignment of intact groups was used to assign the classrooms to either the treatment or comparison groups, because of this there was no way to ensure there was an equal distribution of gender among the participants of either group. The random assignment of intact groups utilized for the study resulted in a difference in the gender representation for one

of the treatment groups that included more males than females. Due to this unequal gender representation within the sample it is possible that the effects of gender cannot be differentiated from the effects of the group. The researcher was also unable to control for varying class size. The random assignment of intact groups also led to the same teacher administering both treatment classrooms and this limits how much of the change was related to the program or the teacher. Testing fatigue was experienced by students during both the pre and post-test administration due to the length of the survey could also be a limitation. According to Bandura, “The strength of people’s convictions in their own effectiveness is likely to affect whether they will even try to cope with given situations” (1977, p. 193). Another potential limitation to the study was a threat to population validity in terms of the findings being generalizable across populations. The reason for this is that the population participating in the study was drawn from a sample consisting of only tenth grade students who were in a district that has been classified as being at-risk. The grade level of the students selected for inclusion within the study was restricted to tenth graders because the volunteer administering teachers allowing access to the convenience sample used within the study primarily taught tenth grade courses. When perceived efficacy-expectations start to rise within the individual they find that the generalizability of motivation and sustained effort begin to impact behavior in both familiar and unfamiliar situations. According to Bandura, “Once established, enhanced self-efficacy tends to generalize to other situations in which performance was self-debilitated by preoccupation with personal inadequacies” (Bandura, 1995). Additionally, there was an unknown factor that impacted males within both the treatment and control groups. There was an increase in GSE total post-test scores for males in both the treatment and comparison group. This suggests that there was some

unknown and uncounted factor possible within the participating school that led to an increase in GSE post scores for males in both the treatment and comparison groups.

Another potential limitation of the study could have been teacher bias. Though the administering teachers' were trained and instructed to follow the program instructions to the letter, they were administering the program within their own classrooms for students' with whom they already had a prior relationship. This potential bias could have impacted the study as to how the administering teachers implemented the study with each class. There is no way at this time to determine if the administering teachers gave each class equal time, support, or proper administration of the digital program or to determine if the students were fully engaged in the program. The time allotment of approximately 30 minutes a week for the program might not be enough to have a meaningful impact on the students' within the study. Also, there was no way to gauge for or accommodate the program administration for special needs students at this time. During the participating teacher training it was determined that there was one student within a treatment classroom that required special needs. All other students' within the treatment classrooms required only minor accommodations related to preferential seating, and printouts of visual materials. These materials were provided for the participating teacher to give these students during the digital administration.

Implications of the Study

The implications of the study are derived from the results of the research and analysis of data gathered from the instrumentation used within the researcher created treatment program. The results suggest that overall the program did no harm to the participants' academic motivation and general self-efficacy can be included in the general toolbox of an instructor without fear of causing harm. No significance was included through student participation within the treatment

program during the initial analysis of the data for either of the research questions. It is possible that a program such as this can have a positive impact on student levels of self-efficacy and achievement motivation, this is supported through subsequent analysis of the data. Also, the only significant scores the data illustrated was for gender relating to the GSE post-test scores for males. This could imply that a program such as this is better suited for male students it is therefore recommended that additional research be done in relation to gender and preferred learning modalities that could have an impact on self-efficacy.

Additional research and testing should be conducted to streamline the measurement procedures of the program given that the delivery method and all the module topics included within the program were supported by the literature within the field. The program itself should also be reevaluated in an attempt to increase impact of the program and yield stronger results. A program such as this delivered to at-risk youth on a large scale within the traditional curriculum of a school day can potentially have a profound impact on how students perceive their ability and select goals. A clearer understanding in developing accurate self-perceptions in regard to beliefs can benefit many at-risk individuals and facilitate them in selecting appropriate goals according to their beliefs. Assisting at-risk students in developing more accurate beliefs and increasing personal self-efficacy can help at-risk students break through glass ceilings imposed upon them by misinformed family, peers, and members of society that influence their personal perceptions in regard to the belief in their own ability. According to Bandura, “Personal goal setting is influenced by self-appraisal of capabilities. The stronger the perceived self-efficacy, the higher the goal challenges people set for themselves and the firmer is their commitment to them” (Bandura, 1993, p. 118).

Suggestions for Future Research

There is ample evidence as supported by the results of this study and the literature within this particular field that suggests additional research and investigation be conducted. With additional research, time, and effort in reworking a program such as the researcher developed SEBII, it is possible that it can have a statistically significant impact on the way students determine their belief in ability and how they select tasks. The results of this study are promising and suggest the need for additional research related to a self-efficacy based improvement program. I recommend future researchers to investigate the following areas:

1. The treatment program should be reviewed and revised to strengthen the connections to the literature and measurement tools.
2. Revise the existing program to correct the potential limitations to the study, primarily the length of the pre and post-test for the instruments used. The instrumentation is modular and can be used in isolation. Research should be conducted to determine if too many subscales were included making the pre and post-test much too long potentially impacting the student accuracy of response.
3. Correlate specific elements of the SEBII program with post-test results to see if any portion of the program generated significant results to identify what needs to be revised within the existing program.
4. Continue data mining and analysis on instrument subscales to identify particular subscales of impact in order to strengthen the program. Subscales of interest and in need of additional analysis in an attempt to identify if they potentially strengthening the program are related to coping ability. Subscales of interest for the AMI include

persistence, and confidence in success. Subscales of interest for the GSE include proactive attitude, proactive coping, and proactive attitude.

5. Further investigate if gender specific programs that revolve around different attributes that have been proven to bolster self-efficacy are of more interest to male students. This information can have an impact on how programs are designed for future use with male students.
6. Consider conducting the study as a longitudinal study over several years where the students are actively engaged and reporting results throughout the duration at staged intervals.
7. Consider implementation of the program to a younger population (middle school students)
8. Consider including a parent learning component so topics are taught to parents and reinforced within the home.
9. Research the use of a similar type of program with students who are older and in their junior or senior year of high school. This study was conducted with sophomores in high school and it is possible that some of the topics covered may not have been viewed as having an immediate impact on their well-being or holding any current value.
10. A potential follow-up survey given to participants of the current study given at a later point in time to ensure that no harm came as a result of participation within the study.

In conclusion the results of the study presented here support information currently within the body of literature. The research contributes a working example of how a self-efficacy based

improvement intervention can work within the classroom setting. Even though the study did not have statistically significant results across the board the results that were found did lend credence to the fact that this type of program did no harm to the participants and there is potential for gaining statistically significant results. A need for this type of program exists especially when one considers the number of students struggling with externally imposed beliefs on their personal ability. A program such as this with further investigation and development can potentially be beneficial to both male and female students and impact their self-efficacious beliefs and achievement motivation in a positive manner.

References

- Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students learning strategies and motivation process. *Journal of Educational Psychology*, 80(3), 260-267.
- Aronson, A., & Steele, C. M. (2005). Stereotypes and the fragility of academic competence, motivation, and self-concept. *Handbook of Competence and Motivations* (pp. 436-456). New York, NY: The Guilford Press.
- Bandura, A. (1971). *Social Learning Theory*. New York, NY: General Learning Press, General Learning Corporation.
- Bandura, A. (1977a). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Bandura, A. (1977b). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2) 122-147.
- Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2) 117-148.
- Bandura, A. (1995). Exercise of personal and collective efficacy in changing societies. *Self-efficacy in changing societies* (pp. 1-45). New York, NY: Cambridge University Press.
- Bandura, A. (1997). *Self-efficacy: The Exercise of Control*. New York, NY: W. H. Freeman.
- Bandura, A. (2003). Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology*, 88(1), 87-99. doi: 10.1037/0021-0910.88.1.87

- Breso, A., Schaufeli, W. B., & Salanova, M. (2010). Can a self-efficacy-based intervention decrease burnout, increase engagement, and enhance performance? A quasi-experimental study. *Higher Education* 61, 339-355. Online publication. doi 10.1007/s10734-010-9334-6
- Burnett, P. A. (September, 1995). *Children's' self-talk and significant others' positive and negative statements*. Paper presented at the Annual Meeting of the Australian Guidance and Counseling Association.
- Campbell, D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research (pp. 1-84). *Printed in U.S.A. Library of Congress Catalogue Card Number 81-80806*. ISBN: 0-395-30787-2 Y-BBS-IO 09 08
- Canfield, J. (1990). Improving students' self-esteem: Using a 10-step system, teachers can help strengthen their students' self-esteem and increase their chances for success in life. *Educational Leadership*, 48(1), 48-50.
- Cardon, P. L. (2014). At-risk students and technology education: A qualitative study. *Journal of Technology Studies*, 26(1), 49-57.
- Carroll, A., Gordon, K., Haynes, M., & Houghton, S. (2013). Goal setting and self-efficacy among delinquent, at-risk and not at-risk adolescents. *Journal of Youth Adolescence*, 42, 431-443. doi: 10.1007/s10964-012-9799-y
- Chemers, M. M. Hu, L., & Garcia, B. F. (2001). Academic self-efficacy and first year college student performance and adjustment. *Journal of Educational Psychology*, 93(1), 55-64. doi: 10.1037//0022-0663.93.1.55
- Clifford, S. J. (1983). Self-efficacy counseling and the maintenance of sobriety. *The Personal and Guidance Journal*, 62(3), 111-114.

- Connelly, L. M. (2008). Pilot studies. *Medsurg Nursing*, 17(6), 411-2.
- Costello, C., & Stone, S. L. M. (2012). Positive psychology and self-efficacy: Potential benefits for college students with attention deficit hyperactivity disorder and learning disabilities. *Journal of Postsecondary Education and Disability*, 25(2), 119-129.
- Dweck, C. S. (1988). A social cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256-273.
- Elliott, E.S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *The Journal of Social Psychology*, 25, 109-116.
- Frydenberg, E., & Lewis, R. (2009). The relationship between problem-solving efficacy and coping amongst Australian adolescents. *British Journal of Guidance and Counselling*, 37(1), 51-64. doi 10.1080/03069880802534054
- Frydenberg, E., Lewis, R., Bugalski, K., Cotta, A., McCarthy, C., Luscombe-Smith, N., & Poole, C. (2004). Prevention is better than cure: Coping skills training for adolescents at school. *Educational Psychology in Practice* 20(2), 117-133. doi 10.1080/02667360410001691053
- Grant, H., & Dweck, C. S. (2003). Clarifying achievement goals and their impact. *Journal of Personality and Social Psychology*, 85(3), 541-553. doi 10.1037/0022-3514.85.3.541
- Grusec, J. E. (1992). Social learning theory and developmental psychology: The legacies of Robert Sears and Albert Bandura. *Developmental Psychology*, 28(5), 776-786.
- Hsieh, P., Sullivan, J. R., & Guerra, N. S. (2007). A closer look at college students: Self-efficacy and goal orientation. *Journal of Advanced Academics*, 18(3), 454-476.
- Hsu, M.L.A., Hou, S.T., & Fan, H.L. (2011). Creative self-efficacy and innovative behavior in a service setting: Optimism as a moderator. *Journal of Creative Behavior*, 45(4), 258-272.

- Jinks, J., & Morgan, V. L. (1997). Students' sense of academic efficacy and achievement in science: A useful new direction for research regarding scientific literacy. *Journal of Personality and Social Psychology*, 41, 586- 598
<http://ejse.southwestern.edu/article/viewArticle/7558/5325>
- Kapikiran, S. (2012). Achievement goal orientations and self-handicapping as mediator and moderator of the relationship between intrinsic achievement motivation and negative automatic thoughts in adolescent students. *Educational Science Theory and Practice*, 12(2), 705-711.
- Keyser, V., & Barling, J. (1981). Determinants of children's self-efficacy beliefs in an academic environment. *Cognitive Theory and Research* 5(1), 29-40.
- Kirby, S., Nataraj, S., Naftel, S. & Berends, M. (1999). *Staffing At-Risk School Districts in Texas: Problems and Prospects*. Santa Monica, CA: RAND Corporation.
- Lao Tzu. (n.d.). BrainyQuote.com. Retrieved February 7, 2017, from BrainyQuote.com Web site: <https://www.brainyquote.com/quotes/quotes/l/laotzu137141.html>
- Ling, L. L. (2009). Enhancing prospective teachers' science teaching efficacy beliefs through scaffolded, student-directed inquiry. *Journal of Elementary Science Education*, 21(1), 51-66.
- Litt, M. D., Kadden, R. M., & Stephens, R. S. (2005). Coping and self-efficacy in marijuana treatment: Results from the marijuana treatment project. *Journal of Consulting and Clinical Psychology*, 73(6), 1015-1025. doi 10.1037/0022-006x.73.6.1015
- Lodewyk, K. R., & Winne, P. H. (2005). Relations among the structure of learning tasks, achievement, and changes in self-efficacy in secondary students. *Journal of Educational Psychology* 9(1), 3-12. doi 10.1037/0022-0663.97.1.3

- Maddux, J. E. (2002). Self-efficacy: The power of believing you can. *Handbook of Positive Psychology* (pp. 277-287). New York, NY: Oxford University Press.
- McCann, R. A., & Austin, S. (1988, April). *At-Risk Youth: Definitions, Dimensions, and Relationships*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA. April 5-9, 1988.
- Meyers, L.S., Gamst, G., & Guarino, A. J. (2006). *Applied Multivariate Research*. Thousand Oaks, CA: Sage Publications, Inc.
- Midgley, C., Maehr, M. L., Hruda, L. Z., Anderman, E. L., & Freeman, K. E. (2000). *Manual for patterns of adaptive learning scales*. Ann Arbor, MI: University of Michigan Press.
- Phan, H. P. (2013). Examination of self-efficacy and hope: A developmental approach using latent growth modeling. *Journal of Educational Research*, 106, 93-104. doi 10.1080/00220671.2010.667008
- Raftopoulos, M., & Bates, G. (2011). It's that knowing that you are not alone: The role of spirituality in adolescent resilience. *International Journal of Children's Spirituality*, 16(2), 151-167. doi 10.1080/1364436x.20011.580729
- Reivich, K. (2010). Promoting self-efficacy in youth. *National Association of School Psychologists*, 39(3), 15-16.
- Sanacore, J. (2008). Turning reluctant learners into inspired learners. *The Clearing House* 82(1), 40-44.
- Schuler, H., Thornton III, G. B., A. Frintrup, A., & Mueller-Hanson, A. (2001). *The Achievement Motivation Inventory (AMI)*. New York, NY: Hans Huber Publishers.
- Schunk, D. H. (1996, April). *Self-efficacy for learning and performance*. Paper presented at the Annual Conference of the American Educational Research Association. New York, NY.

Retrieved from [http://eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&
&ERICEExtSearch](http://eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_ERICEExtSearch)

- Schwarzer, R., & Jerusalem, M. (1995). *Generalized Self-Efficacy Scale*. In J. Weinman, S. Wright, & M. Johnston, *Measures in Health Psychology: A user's portfolio. Causal and Control Beliefs*. (pp. 35-37). Windsor, England: APA Division 38.
- Sobell L. C., & Sobell MB. (1992). *Timeline follow-back: A technique for assessing self-reported alcohol consumption*. In: Litten R, Allen J, editors. *Measuring alcohol consumption: Psychosocial and biochemical methods*. (pp. 41-71). Totowa, NJ: Humana Press. doi 10.1007/978-1-4612-0357-5_3
- Valkenburg, J. (2010). Joining the conversation: Scaffolding and tutoring mathematics. *The Learning Assistance Review*, 15(2), 33-40.
- Weikle, J. E. (1993). Self-talk and self-health. *Eric Clearing House*, 40-44. ED361813. www.eric.ed.gov.
- Wisner, M. D. (2011). Psychological strengths as predictors of effective student leadership. *The Christian Higher Education* 10, 353-375. doi 10.1080/15363759.2011.576223
- Wolters, C. A., Fan, W., & Daugherty, S. G. (2013). Examining achievement goals and causal attributions together as predictors of academic functioning. *Journal of Experimental Education*, 81(3), 295-321. doi 10.1080/00220973.2010.700498
- Woolfolk Hoy, A. (2012). Academic optimism and teacher education. *The Teacher Educator*, 47, 91-100. doi: 10.1080/08878730.2012.662875

Appendix A: General Self Efficacy Scale (GSE Instrument)

General Self-Efficacy Scale (GSE)

by: Ralf Schwarzer & Matthias Jerusalem

Abbreviation: GSE

<http://userpage.fu-berlin.de/health/engscal.htm>

Area of Application: The construct of Perceived Self-Efficacy reflects an optimistic self-belief (Schwarzer, 1992). This is the belief that one can perform a novel or difficult tasks, or cope with adversity -- in various domains of human functioning. Perceived self-efficacy facilitates goal-setting, effort investment, persistence in face of barriers and recovery from setbacks. It can be regarded as a positive resistance resource factor. Ten items are designed to tap this construct. Each item refers to successful coping and implies an internal-stable attribution of success. Perceived self-efficacy is an operative construct, i.e., it is related to subsequent behavior and, therefore, is relevant for clinical practice and behavior change.

General Aspects: The scale was created to assess a general sense of perceived self-efficacy with the aim in mind to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events.

Reliability: In samples from 23 nations, Cronbach's alphas ranged from .76 to .90, with the majority in the high .80s. The scale is unidimensional.

Validity: Criterion-related validity is documented in numerous correlation studies where positive coefficients were found with favorable emotions, dispositional optimism, and work satisfaction. Negative coefficients were found with depression, anxiety, stress, burnout, and health complaints. In studies with cardiac patients, their recovery over a half-year time period could be predicted by pre-surgery self-efficacy.

Test Duration: The scale is usually self-administered, as part of a more comprehensive questionnaire. Preferably, the 10 items are mixed at random into a larger pool of items that have the same response format. Time: It requires 4 minutes on average. Scoring: Responses are made on a 4-point scale. Sum up the responses to all 10 items to yield the final composite score with a range from 10 to 40 minutes. No recoding. **General Self-Efficacy Scale Instrument**

Name: General Self-Efficacy Scale Scale/Subscale Name: General Self-Efficacy Scale

Developers: Schwarzer, R., & Jerusalem, M Year: 1995 Target Audience(s): Adolescents, Adults Language other than English available: 30 languages Type: Attitude

Data collected: Quantitative Data collection format: Self report - Pre/post Reading Level: Flesch-Kincaid Grade level 7.5 Existence of test/technical manuals, user guides, supplemental materials: Full survey and development information downloadable <http://userpage.fu-berlin.de/~health/>

Level of training necessary for administration/scoring/interpretation: None necessary.

Widespread Use/Professional Endorsements: German version developed in 1979 by Matthias Jerusalem and Ralf Schwarzer, and later revised and adapted to 26 other languages by various co-authors. Use successfully internationally for two decades.

Cost of Use: No costs associated with use of this instrument.

Description: The 10 item scale was created to assess a general sense of perceived self-efficacy. Psychometrics: Information on reliability and validity are provided below. If information on a particular psychometric was not found, it is indicated as “no information provided.” It should be noted that this is not necessarily an indication of a lack of reliability or validity within a

particular scale/instrument, but rather a lack of rigorous testing, for various reasons, by the developers or other researchers.

Self Esteem Scale Name: General Self-Efficacy Developers: Schwarzer, R., & Jerusalem, M.

Rating Scale: 1 = Not at all true 2 = Hardly true 3 = Moderately true 4 = Exactly true Items:

Scoring: Add up all responses to a sum score for each subscale. The range for each subscale is from 10 to 40 points. Add up each subscale score for a total score. The range is from 10 to 40*number of subscales used.

Population: The scale is designed for the general adult population, including adolescents.

Persons below the age of 12 should not be tested.

Appendix B: General Self-Efficacy Scale (GSE)

Scoring, Subscales, and Definitions

GSE scoring

The survey consisted of 10 different subscales and the range for each subscale is from 10 to 40 points. Each subscale is summed and produced an individual score for that subscale. Subscale scores are then totaled to generate a total score for the General Self-Efficacy Scale. The range is from 10 to 40*number of subscales used. Measurement was conducted using a 4-point Likert-type scale for the GSE were from “1” Not true At All, “2” Hardly True, “3” Moderately True, to “4” Exactly True..

GSE subscales and definitions

General self-efficacy - Self-efficacy is commonly understood as being very specific; that is, one can have more or less firm self-beliefs in different domains or particular situations of functioning.

Collective self-efficacy - Collective self-efficacy deals with a group's beliefs in its competence for successful action, similar to an individual's belief in his or her competence

Proactive attitude - It is a belief in the rich potential of changes that can be made to improve oneself and one's environment. This includes various facets such as resourcefulness, responsibility, values, and vision.

Self-regulation - This scale refers to post-intentional self-regulation when individuals are in the phase of goal-pursuit and face difficulties in maintaining their action.

Procrastination - The statements deal with reactions you may have to various situations.

Enviomental worry - The statements deal with reactions you may have to various situations.

Proactive coping - The statements deal with reactions you may have to various situations.

Avoidance coping - The statements deal with reactions you may have to various situations.

Social support - The statements deal with reactions you may have to various situations.

Emotional social support seeking - The statements deal with reactions you may have to various situations.

Appendix C: Achievement Motivation Inventory (AMI)

Achievement Motivation Inventory (AMI)

by H. Schuler , G.B. Thornton III , A. Frintrup , R. Mueller-Hanson

Price: \$299.00

Product no.: 05 107 01

Abbreviation: AMI

<http://www.hogrefe.com/program/achievement-motivation-inventory.html>

Area of Application: Personnel Selection, Potential Analysis, Professional Counseling, Personnel Development, Profiling, Psychology of Sports, Personality Research.

General Aspects: The Achievement Motivation Inventory (AMI) is a personality inventory designed to measure a broad construct of work related achievement motivation. It is founded on the theoretical work related to the German «Leistungsmotivationsinventar (LMI)» (Schuler, H. & Prochaska, M. 2001) and enables users to test candidates for 17 different facets of achievement motivation. The theoretical conception of this test is based upon all common conceptualizations of the construct but for the first time integrates relevant social motives into a test measuring the construct of achievement motivation as well. Thus, in addition to traditional scales, e.g. Confidence in Success or Persistence, scales like Dominance or Status Orientation are integrated in the AMI. The AMI consists of 170 items to be responded by examinees on a 7-point-Likert format.

Reliability: Reliability (Cronbach`s alpha) for the total score is $\alpha = .96$ and ranges from $\alpha = .66$ to $\alpha = .83$ for single scales. Retest reliability is $rtt = .94$ for the total score and ranges from $rtt = .71$ to $rtt = .89$ for single scales.

Validity: Content validity was obtained by an intensive research work on all major aspects of achievement motivation and their integration within the test. Expert ratings assured only relevant aspects have been integrated. Additionally, confirmatory factor analysis yielded a good model-fit of the theory. Construct validity is shown by correlations of AMI scales with related personality scales, e.g. from Big Five inventories (ranging up to $r = .72$). Criterion related validity was shown in regard to prediction of grade point averages in US colleges ($r = .22$ for the total score and up to $r = .29$ for single scales) and early academic achievements (ranging between $r = .21$ to $r = .36$ on different scales). Studies showed that there is high social validity in regard to acceptance of the test by examinees.

Norms: $N = 335$ US students; $N = 410$ US working adults; $N = 1.267$ German students; $N = 166$ German working adults. Additional norms for the German original are available.

Test Duration: Approximately 30 min.

Scoring: Add up all responses to a sum score for each subscale. The range is from 1 to 70 points for each subscale. Add up the 17 individual subscale scores for a total score. The total range is from 17 to 1190.

Population: U.S. Sample from 16 to 80.

Appendix D: Achievement Motivation Inventory (AMI)

Scoring, Subscales, and Definitions

Achievement Motivation Inventory (AMI)

Scoring, Subscales, and Definitions

AMI scoring

The survey consisted of 17 different subscales and 170 items with 10 items measuring each of the subscales. Measurement was conducted using a 7-point Likert scale measuring seventeen different domains responses ranged from “1” does not apply at all to “7” applies fully. Each subscale produced an individual score for that subscale. Subscale scores are then totaled to generate a total score for the Achievement Motivation Inventory.

AMI subscales and definitions

Compensatory Effort – “A willingness to expend extra effort in order to avoid failing at a work task, even if this effort results in over-preparation” (Schuler et al., 2004, p. 21).

Competitiveness– “Motivation derived from competing with others. A desire to win and be better and faster than others” (Schuler et al., 2004, p. 21).

Confidence in Success– “Confidence in achieving success even when there are obstacles to overcome” (Schuler et al., 2004, p. 21).

Dominance– “The tendency to exercise power and influence over others” (Schuler et al., 2004, p. 21).

Eagerness to Learn– “The desire and willingness to spend a lot of time enlarging one’s knowledge for knowledge sake” (Schuler et al., 2004, p. 21).

Engagement– “The desire to be regularly engaged in an activity, usually work related” (Schuler et al., 2004, p. 21).

Fearlessness– “A lack of fear of failing at difficult tasks” (Schuler et al., 2004, p. 21).

Flexibility– “A willingness to accept changes and the enjoyment of challenging new tasks” (Schuler et al., 2004, p. 21).

Flow– “The ability to concentrate on something for a long time without being distracted by situational influences” (Schuler et al., 2004, p. 22).

Goal Setting– “The tendency to set goals and to make long term plans for achieving these goals” (Schuler et al., 2004, p. 22).

Independence– “The tendency to take responsibility for one’s own actions” (Schuler et al., 2004, p. 22).

Internality– “The belief that one’s successes are due to internal causes rather than to situational variables” (Schuler et al., 2004, p. 22).

Persistence– “The willingness to exert large amounts of effort over long periods in order to reach a goal” (Schuler et al., 2004, p. 22).

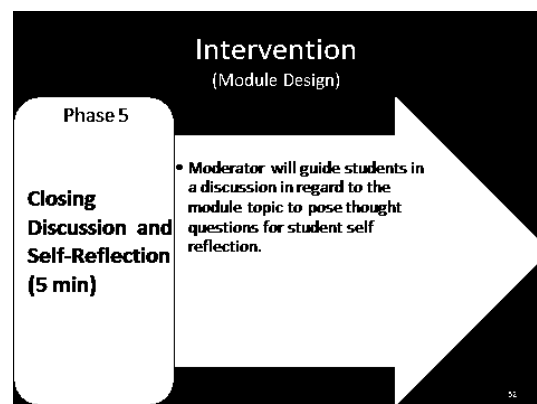
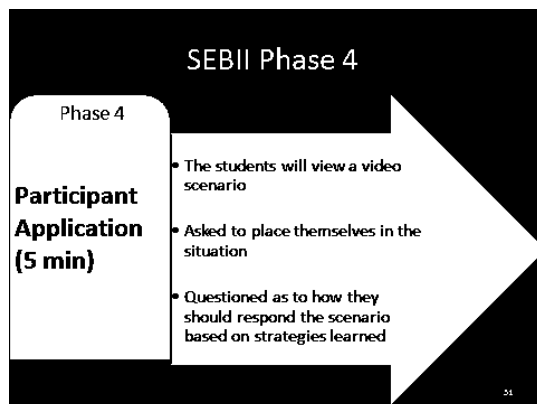
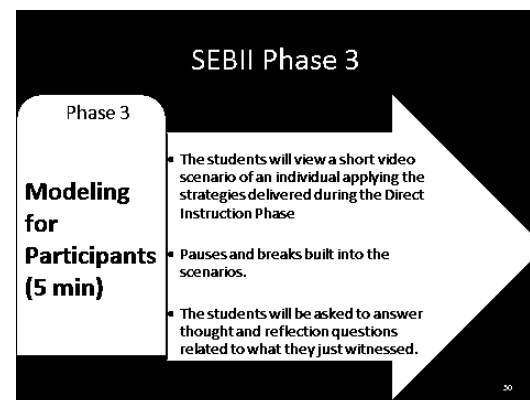
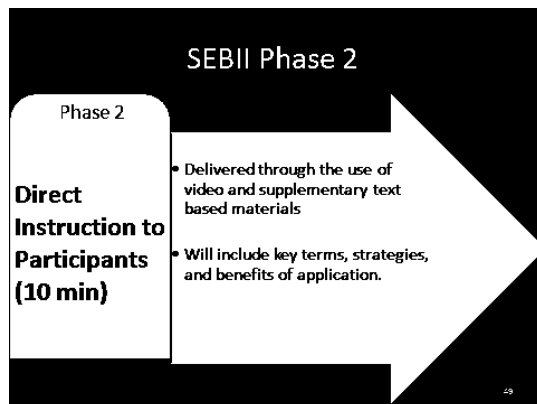
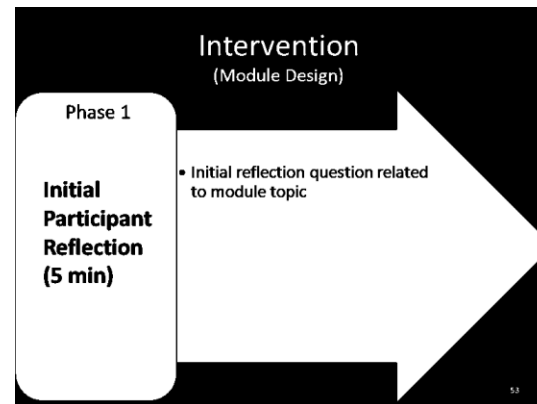
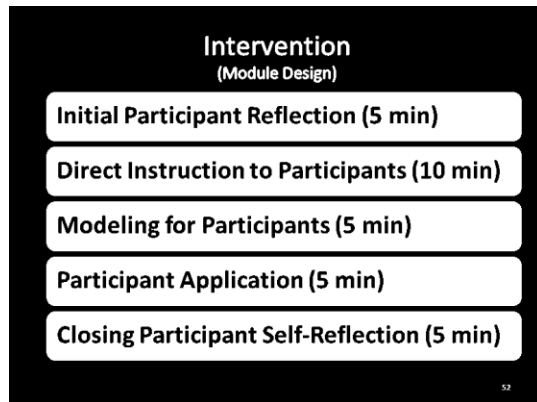
Preference for Difficult Tasks – “The tendency to seek out challenging rather than easy tasks, and the desire to seek greater challenges once one has already completed a difficult task” (Schuler et al., 2004, p. 22).

Pride in Productivity– “A sense of enjoyment and accomplishment derived from doing one’s best at work” (Schuler et al., 2004, p. 22).

Self-Control– “The ability to delay gratification and to organize oneself and one’s work”
(Schuler et al., 2004, p. 22).

Status Orientation – “The desire to attain high status in one’s personal life and to progress professionally” (Schuler et al., 2004, p. 22).

Appendix E: Self Efficacy Based Improvement Intervention (SEBII)



Appendix F: Letter and Consent Form (School President)



*Western Connecticut State University
Department of Education and Educational Psychology
181 White Street
Danbury, CT 06810*

Dear School President,

My name is David Mirto and I am currently a doctoral candidate within the program for Instructional Leadership at Western Connecticut State University. In fulfillment of my dissertation requirements, I will be conducting a study that will facilitate with the need for response to intervention. The study will be investigating student self-efficacy (belief in ability) and motivation achievement and I would like your school to participate in the research.

The General Self-Efficacy scale (GSE) will be administered to the students' to measure their level of perceived self-efficacy. I also will administer the Achievement Motivation Inventory (AMI) to measure the students' perceived level of achievement motivation.

The students will have the opportunity to participate in an eight week program designed to increase their level of self-efficacy and achievement motivation. The program is designed to be minimally invasive to the school day and will require only 30 minutes per week and can be facilitated by the classroom teacher.

This research project has been reviewed and approved by the WCSU Institutional Review Board. If you have questions concerning the rights of the subjects involved in research studies please call the WCSU Assurances Administrator at irb@wcsu.edu and mention Protocol Number 1112-132. If you have any questions for the IRB board or wish to report any items the Western Connecticut State University IRB Chairperson Dr. Jessica Eckstein can be contacted at (###) ###-####.

If you have any questions, please feel free to contact me at mitro001@connect.wcsu.edu or by phone at (###) ###-####.

If you agree to have your school participate in this study, please sign the attached form and mail it back to me using the self-addressed stamped envelope provided by January 20th, 2015.

I sincerely thank you for your consideration,

David Mirto

Consent Form

- **Please consider participation in the study that was outlined for you in the attached letter.**
- **Once you have made your decision you must sign the appropriate section of the form and return it to the study representative within your building.**

Please return if you AGREE to be included in the study

I, _____ AGREE to have my school included in the study and acknowledge that the researcher has explained to me the purpose this research study to be conducted within my school or district. I attest that the researcher has included any risks involved, and offered to answer any questions I may have about the nature of school or district participation. I understand all information gathered during this project will be completely confidential.

Name: _____

Date _____

Please return if you DO NOT agree to be included in the study

I, _____ DO NOT AGREE to have my school included in the study and acknowledge that the researcher has explained to me the purpose this research study to be conducted within my school or district. I attest that the researcher has included any risks involved, and offered to answer any questions I may have about the nature of school or district participation. I understand all information gathered during this project will be completely confidential.

Name: _____

Date _____

Appendix G: Letter and Consent Form (Principal)



*Western Connecticut State University
Department of Education and Educational Psychology
181 White Street
Danbury, CT 06810*

Dear School Principal,

My name is David Mirto and I am currently a doctoral candidate within the program for Instructional Leadership at Western Connecticut State University. In fulfillment of my dissertation requirements, I will be conducting a study that will facilitate with the need for response to intervention. The study will be investigating student self-efficacy (belief in ability) and motivation achievement and I would like your school to participate in the research.

The General Self-Efficacy scale (GSE) will be administered to the students' to measure their level of perceived self-efficacy. I also will administer the Achievement Motivation Inventory (AMI) to measure the students' perceived level of achievement motivation.

The students will have the opportunity to participate in an eight week program designed to increase their level of self-efficacy and achievement motivation. The program is designed to be minimally invasive to the school day and will require only 30 minutes per week and can be facilitated by the classroom teacher.

This research project has been reviewed and approved by the WCSU Institutional Review Board. If you have questions concerning the rights of the subjects involved in research studies please call the WCSU Assurances Administrator at irb@wcsu.edu and mention Protocol Number 1112-132. If you have any questions for the IRB board or wish to report any items the Western Connecticut State University IRB Chairperson Dr. Jessica Eckstein can be contacted at (###) ###-####.

If you have any questions, please feel free to contact me at mitro001@connect.wcsu.edu or by phone at (###) ###-####.

If you agree to have your school participate in this study, please sign the attached form and mail it back to me using the self-addressed stamped envelope provided by January 20th, 2015.

I sincerely thank you for your consideration,

David Mirto

Please consider participation in the study that was outlined for you in the attached letter.

Once you have made your decision you must sign the appropriate section of the form and return it to the study representative within your building.

Please return if you agree to be included in the study

I, _____ AGREE to have my school included in the study and acknowledge that the researcher has explained to me the purpose this research study to be conducted within my school or district. I attest that the researcher has included any risks involved, and offered to answer any questions I may have about the nature of school or district participation. I understand all information gathered during this project will be completely confidential.

Name: _____

Date _____

Please return if you DO NOT agree to be included in the study

I, _____ DO NOT AGREE to have my school included in the study and acknowledge that the researcher has explained to me the purpose this research study to be conducted within my school or district. I attest that the researcher has included any risks involved, and offered to answer any questions I may have about the nature of school or district participation. I understand all information gathered during this project will be completely confidential.

Name: _____

Date _____

Appendix H: Letter and Assent Form (Student)

WESTERN CONNECTICUT STATE UNIVERSITY
Student Assent Form to Participate in a Research Study

Dear Student,

My name is David Mirto and I am currently a doctoral candidate within the program for Instructional Leadership at Western Connecticut State University. In fulfillment of my dissertation requirements, I will be conducting a study investigating the effects of an online learning program and I would like you to participate in the research.

You will have the opportunity to participate in an eight week online learning program. The program is designed to be minimally invasive to the school day and will require only 30 minutes of your class time per week. The program will be conducted by your regular classroom teacher.

This research project has been reviewed and approved by the WCSU Institutional Review Board. If you have questions concerning the rights of the subjects involved in research studies please call the WCSU Assurances Administrator at irb@wcsu.edu and mention Protocol Number 1112-132. If you have any questions for the IRB board or wish to report any items the Western Connecticut State University IRB Chairperson Dr. Jessica Eckstein can be contacted at (###) ###-####.

If you have any questions, please feel free to contact me at mitro001@connect.wcsu.edu or by phone at (###) ###-####.

If you agree to participate in this study, please sign the attached form and return it to your classroom teacher by February 15th, 2015.

I sincerely thank you for your consideration,

David Mirto

Student Assent Form

Please consider participation in the study that was outlined for you in the attached letter.

Once you have made your decision you must sign the appropriate section of the form and return it to the study representative within your building.

Please return if you agree to be included in the study

I, _____ AGREE to have my school included in the study and acknowledge that the researcher has explained to me the purpose this research study to be conducted within my school or district. I attest that the researcher has included any risks involved, and offered to answer any questions I may have about the nature of school or district participation. I understand all information gathered during this project will be completely confidential.

Name: _____

Date _____

Please return if you DO NOT agree to be included in the study

I, _____ DO NOT AGREE to have my school included in the study and acknowledge that the researcher has explained to me the purpose this research study to be conducted within my school or district. I attest that the researcher has included any risks involved, and offered to answer any questions I may have about the nature of school or district participation. I understand all information gathered during this project will be completely confidential.

Name: _____

Date _____

Appendix I: Letter and Consent Form (Teacher)

January 1, 2015

Dear Classroom Teacher,

My name is David Mirto and I am currently a doctoral candidate within the program for Instructional Leadership at Western Connecticut State University. In fulfillment of my dissertation requirements, I will be conducting a study investigating student self-efficacy (belief in ability) and motivation achievement this fall and I would like your class to participate in the research.

The General Self-Efficacy scale (GSE) will be administered to the students' within your class to measure their level of perceived self-efficacy. I also will administer the Achievement Motivation Inventory (AMI) to measure the students' perceived level of achievement motivation. I would like your permission to include the results from the administration of the instruments within your class in the confines of my study. The administration will occur in spring of 2015, and there will be no adverse repercussions if you decide not to include the information from your class in the study.

The students will have the opportunity to participate in an eight week program designed to increase their level of self-efficacy and achievement motivation. The program is designed to be minimally invasive to the school day and will require only 30 minutes per week and will be facilitated by the classroom teacher.

This research project has been reviewed and approved by the WCSU Institutional Review Board. If you have questions concerning the rights of the subjects involved in research studies please call the WCSU Assurances Administrator at irb@wcsu.edu and mention Protocol Number 1112-132. If you have any questions for the IRB board or wish to report any items the Western Connecticut State University IRB Chairperson Dr. Jessica Eckstein can be contacted at (###)

###-####.

If you have any questions, please feel free to contact me at mitro001@connect.wcsu.edu or by phone at (###) ###-####.

If you agree to have your class participate in this study, please sign the attached form and mail it back to me using the self-addressed stamped envelope provided by January 30th, 2015. If you choose not to have your class participate please fill out return the portion of the provided form stating that you choose not to participate or you can email me directly at mitro001@connect.wcsu.edu.

I sincerely thank you for your consideration,

David Mirto

Consent Form

Please consider participation in the study that was outlined for you in the attached letter.

Once you have made your decision you must sign the appropriate section of the form and return it to the study representative within your building.

Please return if you agree to be included in the study

I, _____ AGREE to have my school included in the study and acknowledge that the researcher has explained to me the purpose this research study to be conducted within my school or district. I attest that the researcher has included any risks involved, and offered to answer any questions I may have about the nature of school or district participation. I understand all information gathered during this project will be completely confidential.

Name: _____

Date _____

Please return if you DO NOT agree to be included in the study

I, _____ DO NOT AGREE to have my school included in the study and acknowledge that the researcher has explained to me the purpose this research study to be conducted within my school or district. I attest that the researcher has included any risks involved, and offered to answer any questions I may have about the nature of school or district participation. I understand all information gathered during this project will be completely confidential.

Name: _____

Date _____

Appendix J: Letter and Consent Form (Parents and Guardian)

Parent Consent Form to Participate in a Research Study

Dear Parent or Guardian,

My name is David Mirto and I am currently a doctoral candidate within the program for Instructional Leadership at Western Connecticut State University. In fulfillment of my dissertation requirements, I will be conducting a study investigating student self-efficacy (belief in ability) and motivation achievement this fall and I would like your child to participate in the research.

The General Self-Efficacy scale (GSE) will be administered to your child to measure their level of perceived self-efficacy. I also will administer the Achievement Motivation Inventory (AMI) to measure your child's perceived level of achievement motivation. These assessments will provide valuable information about your child's belief in their ability and motivation to achieve. In addition your child will have the opportunity to participate in an eight week online program designed to increase their level of self-efficacy and achievement motivation. The time allotment needed to participate in the study will be 30 minutes per week and will be facilitated by your child's teacher.

Results will not be reported to the school or impact your child's academic grade in any manner. Student names will not be gathered and the information will remain confidential. The information will not be used by the school, classroom teacher, or district to label the students in any manner. The information will be used to assess a program designed to increase student self-efficacy levels. If you choose to have your child participate, the GRE will be given in school on and will take approximately 15 minutes to complete.

This research study has been reviewed and approved by Western Connecticut State University's Institutional Review Board. It is hoped that the results of this study will help the researcher develop an effective inquiry learning program that stimulates student motivation. If you have any questions for the IRB board or wish to report any items the Western Connecticut State University IRB Chairperson can be contacted at (###) ###-####.

Participation in this study is completely voluntary. You are free to withdraw your child from the study at any time. All information is completely confidential.

If you have any questions, please contact me via email at mitro001@connect.wcsu.edu or phone at (###) ###-####.

If you agree to have your child participate in this pilot study, please sign the attached form and mail it back to me using the self-addressed stamped envelope provided by February 1st, 2015.

I thank you for your consideration,

David Mirto

Parent Consent Form

- Please consider your child's participation in the study that was outlined for you in the attached letter.
- Once you have made your decision you must sign the appropriate section of the form and return it to the study representative within your building.

Please return if you AGREE to have your child be included in the study

I, _____, the parent/legal guardian of the student minor

(printed name of parent or guardian) below, acknowledge that the researcher has explained to me the purpose this research study, included any risks involved, and offered to answer any questions I may have about the nature of my child's participation. I attest to being older than 18 years of age and voluntarily consent to my child's participation. I understand all information gathered during this project will be completely confidential.

Student/Minors Name: _____

Signature of Parent or Guardian: _____

Date _____

Please return if you DO NOT AGREE to have your child be included in the study

I, _____, the parent/legal guardian of the student minor

(printed name of parent or guardian) below, acknowledge that the researcher has explained to me the purpose this research study, included any risks involved, and offered to answer any questions I may have about the nature of my child's participation. I attest to being older than 18 years of age and voluntarily reject to my child's participation.

Student/Minors Name: _____

Signature of Parent or Guardian: _____

Date _____

Appendix K: Self-Efficacy Based Improvement Intervention Overview

Self-Efficacy Based Improvement Intervention Overview

The Treatment Program: Self-Efficacy Based Improvement Intervention

Type of Study: Quantitative Study

Research Design: Experimental Research Design

Assignment of Participants: Random Assignment of Intact Groups

Design of Treatment Program: XOX

Instruments: *General Self-Efficacy Scale* (GSE) and the *Achievement Motivation Inventory* (AMI)

The program design was inspired by and modeled after the work of Albert Bandura and included module components that focused on direct experience, vicarious experience, and symbolic sources of information.

The program spanned an 8 week time period with a pretest administration in Week 1 and a posttest administration in week 8. Weeks 2-7 were the administration of the Self-Efficacy Based Improvement Intervention modules.

The Self-Efficacy Based Improvement Intervention contained six modules another potential limitation of the study could have been teacher bias. Though the administering teachers' were trained and instructed to follow the program instructions to the letter, they were administering the program within their own classrooms for students' with whom they already had a prior relationship. This potential bias could have impacted the study as to how the administering teachers implemented the study with each class. Other students' within the treatment classrooms required only minor accommodations related to preferential seating, and

printouts of visual materials. These materials were provided for the participating teacher to give these students during the digital administration. that may have an impact on increasing general self-efficacy and students' Achievement Self-Perceptions levels. Weekly module topics included attributing success, scaffolding, selecting goals, coping skills, sustaining beliefs, and maintaining optimism

The weekly modules were designed to be self-contained and delivered through www.improvementintervention.com . The on-site research facilitator (teacher) received program administration training and was responsible for facilitating the onsite administration of the modules to the participating students.

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215

Appendix L: SEBII Module Outline in Brief

SEBII Module Outline in Brief

Phase 1

The initial participant reflection about the topic, this took approximately 5 minutes. During this phase the students were given open-ended question in relation to the module topic and asked to ponder the item.

Phase 2

The direct instruction phase and took approximately 6 to 10 minutes depending upon the module. During the direct instruction phase the students watched an instructional video or scenario that illustrated the concepts, strategies, and tactics for the module topic.

Phase 3

The modeling phase and took approximately 3 to 5 minutes, during this phase the students watched a video scenario of an individual applying the strategies delivered to them during the previous direct instruction phase.

Phase 4

The participant application phase and took approximately 5 minutes to administer. During this phase the students reviewed a short video scenario and were asked prior to the start of the video to imagine themselves within the situation. The students were prompted with thought questions throughout the video scenario while they watched.

Phase 5

The discussion section and took approximately 3 minutes. The discussion was led by the trained classroom teacher to pose thought questions for student discussion and self-reflection. During this time the students were given the reflection questions as to how they can apply the strategies learned in their own lives

Appendix M: SEBII Pre Curriculum

SEBII Pre Curriculum			
Week	Activity	Topic	Administration Time
1	Pre-test	N/A	1 Hour
2	Module 1	Attributing Success	35 minuets
3	Module 2	Scaffolding Tasks	35 minuets
4	Module 3	Selecting Goals	35 minuets
5	Module 4	Developing Coping Skills	35 minuets
6	Module 5	Building and Sustaining Beliefs	35 minuets
7	Module 6	Maintaining optimism	35 minuets
8	Post-test	N/A	1 Hour

Appendix N: SEBII Website Overview

Welcome to SEBII

Instructor Resources

SEBII Affirmation

**Self belief is a positive tonic that
helps people grow
beyond their dreams.**

Module 1

Module 2

Module 3

Module 4

Module 5

Module 6

Instructor Resources

SEBII Affirmation

**Self belief is a positive tonic that
helps people grow
beyond their dreams.**

Researcher
Contact

Module
Delivery
Information

Distributing and
Collecting
Assent/Consent
Forms

End of Program
Student
Debriefing

Back

Module Delivery Information

- The SEBII improvement intervention program was designed to be easily implemented by the classroom teacher. Most of the responsibility of the classroom teacher is taking attendance the day of the module administration, displaying the module on a SmartBoard or LCD projector, clicking through the individual stages of the module, and facilitating a brief discussion at the end of the module administration with the thought questions provided. 5
- Students will be provided journals that the facilitating teachers are asked to distribute prior to each module and collect at the end. The students are not required to write any responses within the journals but have the option if they wish to do so.
- Modules will be administered by the participating once a week for the six week study.
- The day of the module delivery is at the discretion of the participating teacher so long as only one module per week is administered. It is recommended that you pick one day to administer the program modules and keep that day consistent throughout the duration of the study.
- Each Module will take approximately 35 minutes to complete.
- Here is a walk through of the module administration with screen shot visuals to make facilitation easier for the participating teachers.

Prior to Module Start

- Distribute Student Journals
- Display Intervention Module on LCD or SmartBoard with Sound
- Begin Module

During Module Administration



Click in Any Yellow Banner to get Back to Home Page

Click to Select Module

Welcome to Module 1

Attributing Success

Module 1 Affirmation

**"Choice, not circumstances,
determines your success."**

~Anonymous

What Do
You Know?

Introduction

In Action

What Would
You Do?

Let's Think!

Final
Reflections

Welcome to Module 2

Scaffolding Tasks

Module 2 Affirmation

Most "impossible" goals can be met simply by breaking them down into bite size chunks,

writing them down, believing them, and then going full speed ahead as if they were routine.

~Don Lancaster

What Do
You Know?

Introduction

In Action

What Would
You Do?

Let's Think!

Final
Reflections

Welcome to Module 3

Selecting Goals

Module 3 Affirmation

When it is obvious
that the goals cannot be reached,
don't adjust the goals, adjust the action steps.

~Confucius

What Do
You Know?

Introduction

In Action

What Would
You Do?

Let's Think!

Final
Reflections

Welcome to Module 4

Developing Coping Skills

Module 4 Affirmation

"Health, happiness and success depend upon the fighting spirit of each person.

The big thing is not what happens to us in life
- but what we do about what happens to us."

~George Allen

What Do
You Know?

Introduction

In Action

What Would
You Do?

Let's Think!

Final
Reflections

Welcome to Module 5

Building and Sustaining Beliefs

Module 5 Affirmation

What people believe
prevails over the truth.

- Sophocles

What Do
You Know?

Introduction

In Action

What Would
You Do?

Let's Think!

Final
Reflections

Welcome to Module 6

Maintaining Optimism

Module 6 Affirmation

Optimism is the faith
that leads to achievement.
Nothing can be done without
hope or confidence.

~Helen Keller

What Do
You Know?

Introduction

In Action

What Would
You Do?

Let's Think!

Final
Reflections

Appendix O: Threats Related to the Study

Relevant to internal validity, eight different classes of extraneous variables will be presented; these variables, if not controlled in the experimental design, might produce effects confounded with the effect of the experimental stimulus. They represent the 'effects of:

1. History, the specific events occurring between the first and second measurement in addition to the experimental variable (Campbell & Stanley, 1963, p. 5).
2. Maturation is the “processes within the respondents operating as a function of the passage of time per se (not specific to the particular events), including growing older, growing hungrier, growing more tired, and the like” (Campbell & Stanley, 1963, p. 5).
3. Testing, the effects of taking a test upon the scores of a second testing” (Campbell & Stanley, 1963, p. 5).
4. Instrumentation, in which changes in the calibration of a measuring instrument or changes in the observers or scorers used may produce changes in the obtained measurements” (Campbell & Stanley, 1963, p. 5).
5. Statistical regression, operating where groups have been selected on the basis of their extreme scores” (Campbell & Stanley, 1963, p. 5).
6. Biases resulting in differential selection of respondents for the comparison groups” (Campbell & Stanley, 1963, p. 5).
7. Experimental mortality, or differential loss of respondents from the comparison groups” (Campbell & Stanley, 1963, p. 5).

8. Selection-maturation interaction, etc., which in certain of the multiple-group quasi-experimental designs, such as Design, is confounded with, i.e., might be mistaken for, the effect of the experimental variable” (Campbell & Stanley, 1963, p. 5).

The factors jeopardizing external validity or representativeness which will be discussed are:

9. The reactive or interaction effect of testing, in which a pretest might increase or decrease the respondent's sensitivity or responsiveness to the experimental variable and thus make the results obtained for a pretested population unrepresentative of the effects of the experimental variable for the unpretested universe from which the experimental respondents were selected” (Campbell & Stanley, 1963, pp. 5-6).

10. The interaction effects of selection biases and the experimental variable” (Campbell & Stanley, 1963, p. 6).

11. Reactive effects of experimental arrangements, which would preclude generalization about the effect of the experimental variable upon persons being exposed to it in non experimental settings” (Campbell & Stanley, 1963, p. 6).

12. Multiple-treatment interference, likely to occur whenever multiple treatments are applied to the same respondents, because the effects of prior treatments are not usually erasable. This is a particular problem for one group designs of type 8 or 9. ” (Campbell & Stanley, 1963, p. 6).

Appendix P: Citi Certification

CITI Collaborative Institutional Training Initiative

Basic/Refresher Course - Human Subjects Research Curriculum Completion Report Printed on 1/23/2012

Learner: David Mirto (username: teacher77)

Institution: Western CT State University

Contact Information Phone: 203-910-1071

Email: mitro001@connect.wcsu.edu

Social/Behavioral Research Course:

Stage 1. Basic Course Passed on 11/09/11 (Ref # 7007284)

Required Modules	Date Completed	
Belmont Report and CITI Course Introduction	11/09/11	2/3 (67%)
Students in Research	11/09/11	6/10 (60%)
Defining Research with Human Subjects - SBR	11/09/11	4/5 (80%)
The Regulations and The Social and Behavioral Sciences - SBR	11/09/11	4/5 (80%)
Informed Consent - SBR	11/09/11	5/5 (100%)
Western CT State University	11/09/11	no quiz

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator

[Return](#)